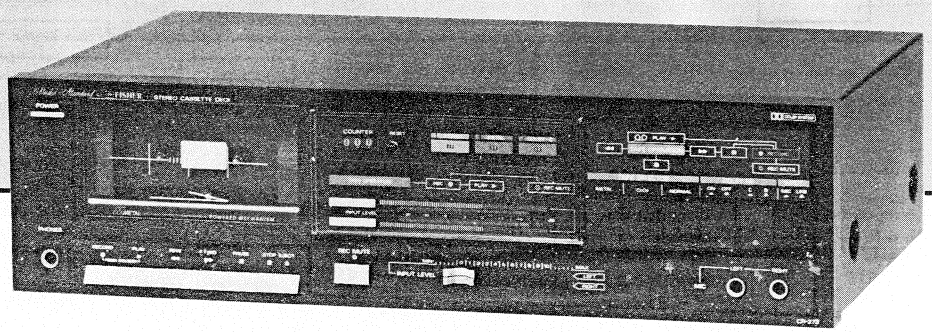
SERVICE MANUAL

FISHER

CR-273

Stereo Cassette Deck

(EUROPE)



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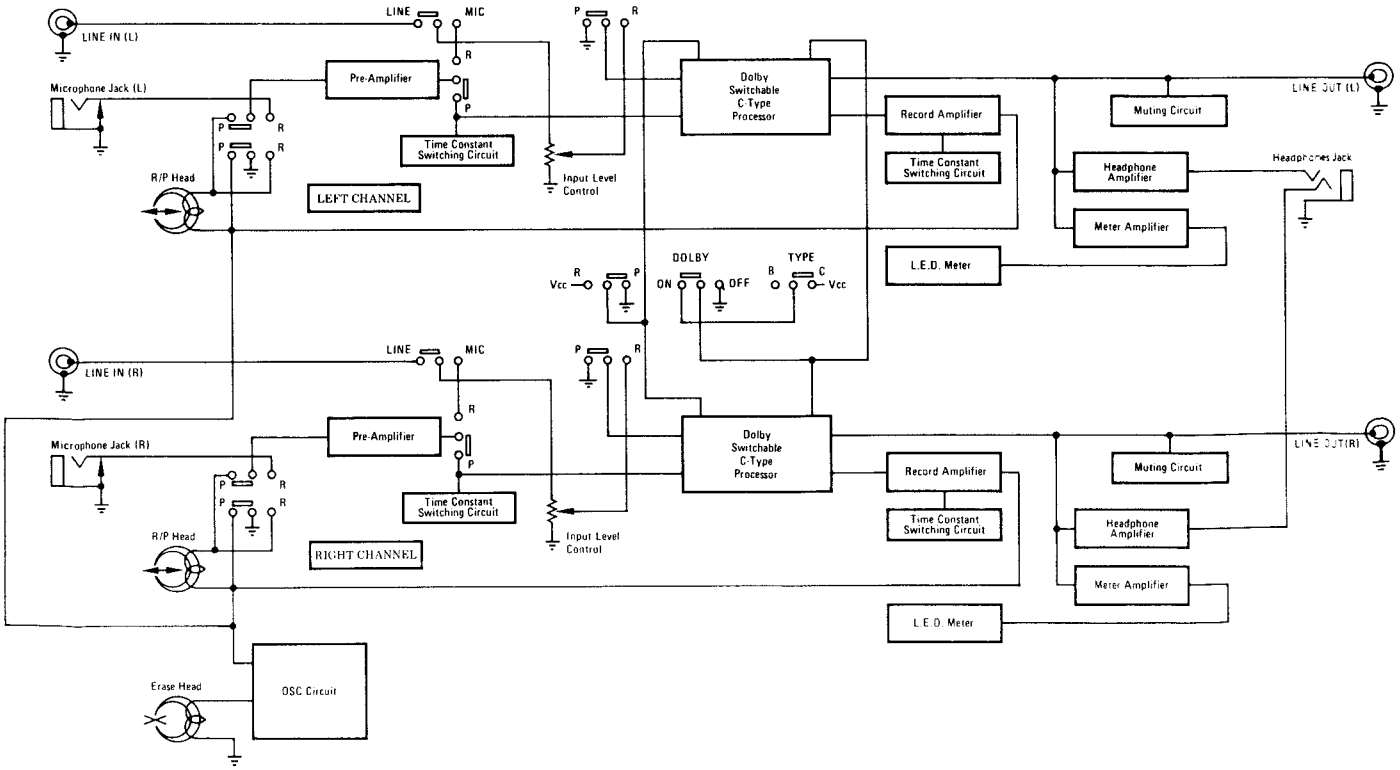
FUNCTIONAL BLOCK DIAGRAM



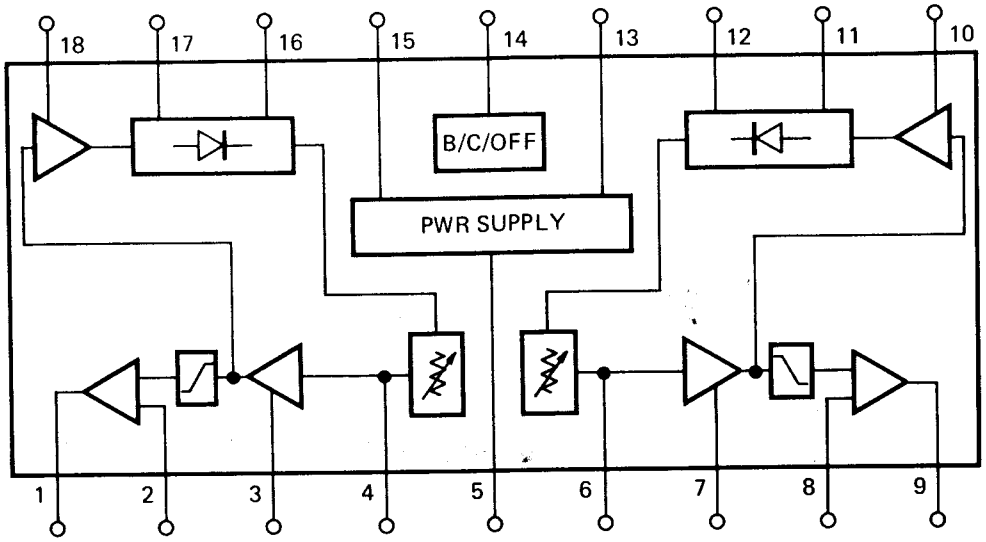
SPECIFICATIONS

CASSETTE DECK	CR-273
Motor	DC Governor
Cassette Loading	Front
Drive System	(1) Capstan
Number of Heads	2
Head Material	Hard Permalloy/Ferrite
Operation	Powered Mechanism
Wow & Flutter	0.06 % WRMS
Signal-to-Noise Ratio (CCIR Weighted)	
Dolby* Off	52 dB
Dolby* On B	60 dB
Dolby* On C	70 dB
Erase Ratio	70 dB
Channel Separation	40 dB
Signal Crosstalk	70 dB
Frequency Response	
Normal Tape (±3 dB)	30 Hz – 14 kHz
CrO_2 Equivalent Tape (±3 dB)	30 Hz – 15 kHz
Metal Tape (±3 dB)	30 Hz – 15 kHz
Total Harmonic Distortion	
at 0 VU	1.5 %
Fast Forward/Rewind Time	
(C-60)	110 sec.
Level Indicators	(2) L.E.D. Meters
Inputs (Sensitivity/Impedance)	(2) Microphone 1.0 mV/10 kΩ (2) Line 70 mV/35 kΩ
Output (Level 0 VU/Impedance)	(2) Line 620 mV/1.5 kΩ
Tape Select Buttons	Normal, CrO_2, Metal
Tape Counter	Mechanical
Power Requirements	AC 120/220 V 50 Hz
Power Consumption	12 W
Dimensions (W x H x D)	440 x 124 x 250 mm
Weight (approx.)	3.5 kg

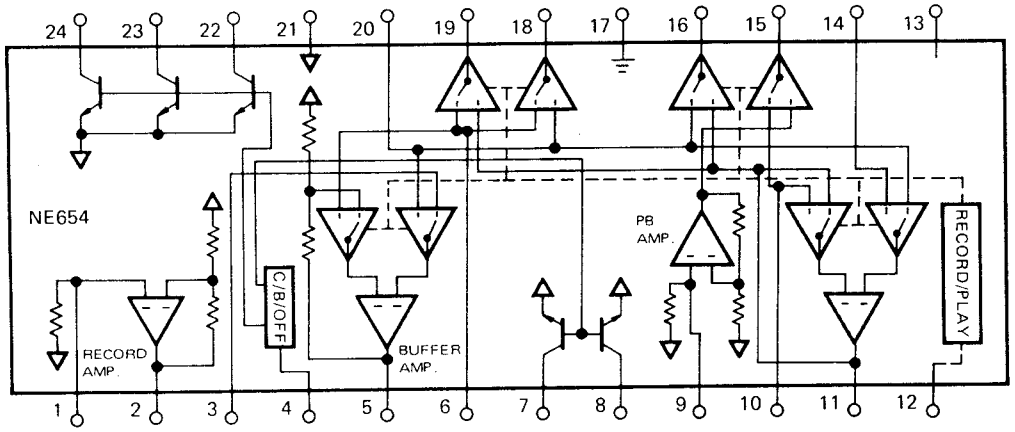
*Dolby is registered trademark of Dolby Laboratories.

Because its products are subject to continuous improvement, Fisher Corporation reserves the right to modify product designs and specifications without notice and without incurring any obligation.

DOLBY IC NE652 BLOCK DIAGRAM

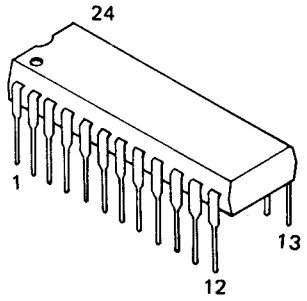


DOLBY IC NE654 BLOCK DIAGRAM

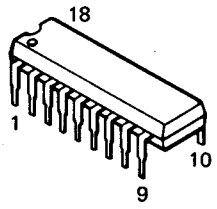


SEMICONDUCTOR LEAD IDENTIFICATION

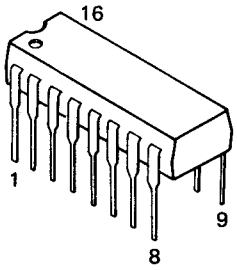
INTEGRATED CIRCUITS



- NE654

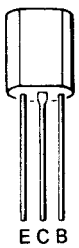


- NE652

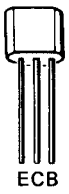


- IR2E02

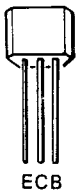
BI-POLAR TRANSISTORS



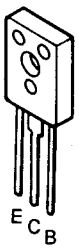
- 2SD400



- 2SD1012

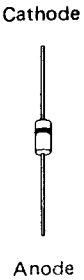


- 2SC1571
- 2SC1684
- 2SD734

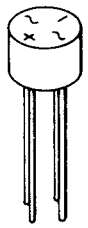


- 2SC1846

DIODES

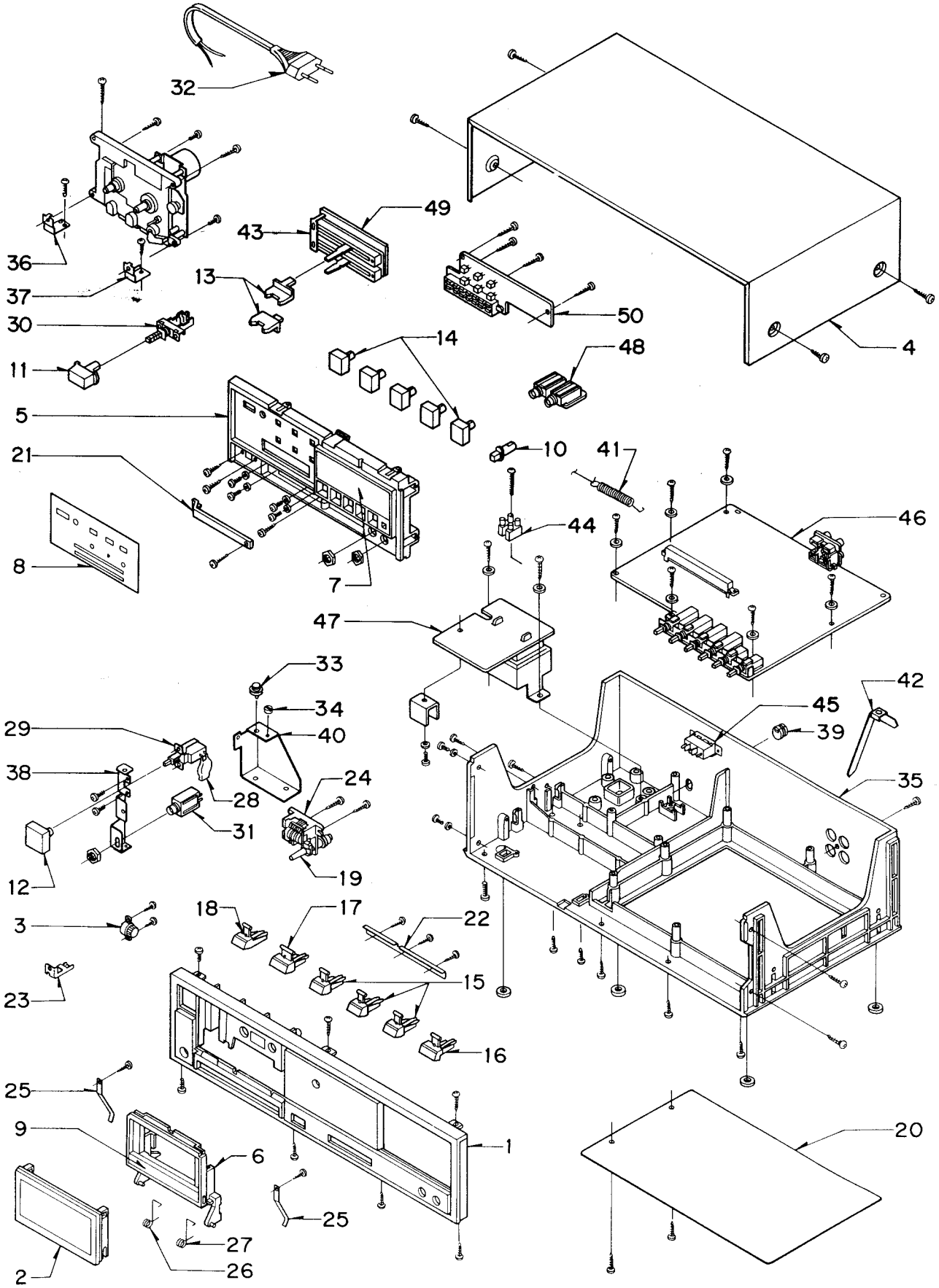


- GZA3.3Y
- GZA5.6L
- GZA11Y
- GZA12Y
- GZA20U



- W02

CABINET & CHASSIS EXPLODED VIEW



PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	PACKAGE		
	141 6 1419 65807	Individual Carton	1
	141 6 1449 83500	Pad Right	1
	141 6 1449 83600	Pad Left	1
	141 6 2519 10190	Poly Cover	1
	131 2 7103 32260	Label	1
	141 6 4729 23900	Label Caution	1
	ACCESSORIES		
	131 0 4004 15200	Wire Shield Assy	1
	131 0 4004 15201	Wire Shield Assy	1
	131 6 4519 15700	Guarantee Cert	1
	141 6 2519 24033	Poly Cover 240 x 330	1
	141 6 4559 03200	Serial No. Sheet	1
	142 6 4119 32037	Instruction Booklet	1
	CABINET		
1	141 0 1119 88901	Cabinet Front Assy	1
2	131 2 1107 26611	Clear Lid Cassete Assy	1
3	141 0 5519 07901	Gear Eject Assy	1
4	141 2 1119 83901	Cover	1
5	141 2 1149 28900	Panel Chassis	1
6	141 2 1249 34000	Lid Cassette	1
7	141 2 1439 11203	Sheet Switch	1
8	141 2 1439 11303	Sheet Indicator	1
9	141 2 1529 03604	Panel Head	1
10	131 2 1601 69601	Knob	1
11	131 2 1601 72700	Knob(Rec Mute)	1
12	131 2 1601 85202	Knob(Power)	1
13	131 2 1601 85300	Knob(Balance)	2
14	131 2 1601 89000	Knob(Function)	5
15	141 2 1659 08400	Knob Select	3
16	141 2 1659 08500	Knob Select(Stop)	1
17	141 2 1659 08600	Knob Select(Play)	1
18	141 2 1659 08700	Knob Select(Rec)	1
19	141 2 1659 09200	Knob Reset	1
20	141 2 2449 36000	Sheet	1
21	141 2 2449 44601	Screen Volume	1
22	141 2 3519 62700	Plate Holder Knob	1
23	141 2 3519 62900	Plate Holder Lid	1
24	141 2 8119 11600	Counter	1
25	141 2 8539 48600	Spring Cassette Hold	2
26	141 2 8549 17500	Spring Lid Cassette-up	1
27	141 2 8549 18300	Spring Lid Cassette-up	1
28	⚠ 4 2239 70490	Capacitor 0.01μF 400V	1
29	⚠ 4 2312 05060	Switch Push Power	1
30	4 2319 74441	Push Switch	1
31	4 2352 01300	Jack 3P	1
32	⚠ 4 2439 70350	Line Cord	1
33	131 0 3020 11000	Pully Assy	1
34	134 2 4124 12200	Cam	1
35	141 2 3119 17905	Chassis Cabinet	1
36	141 2 3169 20100	Bracket Chassis	1
37	141 2 3169 20900	Bracket Chassis Right	1
38	141 2 3519 62100	Bracket Front	1
39	141 2 3899 10400	Bushing	1
40	141 2 8219 33200	Braket String	1
41	141 2 8519 99900	Spring Lever Record	1
42	141 2 8539 48200	Spring Earth	1
43	141 2 8539 48800	Plate Earth Volume	1
44	⚠ 4 2379 70560	Terminal	1
45	⚠ 4 2319 72140	Switch Slide	1
46	4 1329 78222	Amplifier P.C.B. Assy	1
47	4 1329 77416	Power Supply P.C.B. Assy	1
48	4 1329 78230	Mic P.C.B. Assy	1
49	4 1329 78240	Volume P.C.B. Assy	1
50	4 5119 70820	L.E.D. Meter P.C.B. Assy	1

NOTES:
1. Parts order must contain Model Number, Part Number and Descroption.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CASSETTE DECK ELECTRICAL ADJUSTMENTS

CLEANING AND DEMAGNETIZATION OF THE HEAD

If the tape-contacting surfaces of the parts such as the head, the capstan and the pinch roller are dirty, it results to irregular tape running, imperfect recording and erasing, tone deterioration, and the curling of the tape at the capstan.

- **Cleaning Method**

1. Remove the Cassette Lid. (Fig. 1)
2. Wipe the head, the capstan, and the pinch roller clean with a cleaning cotton swab. If they are extremely dirty, use a cotton swab moistened in absolute alcohol or cleaning liquid.
3. Insert the head cover.

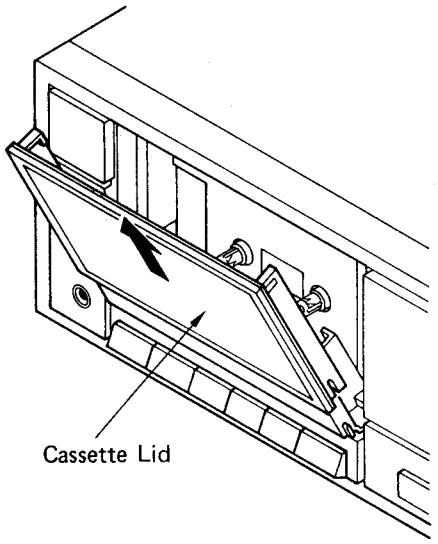


Fig. 1

Pull out the Cassette Lid in the direction of the arrow.

- **Head Demagnetization**

The head is magnetized after long usage and it results to noise and tone deterioration. Therefore, demagnetize the head with a demagnetizer. Be sure to turn off the power source.

TAPE SPEED ADJUSTMENT

Play back a 3 kHz test tape (Example: TEAC MTT-111 or its equivalent) and adjust the speed adjusting volume inside the motor to obtain the playback frequency of 3000 – 3090 Hz. (Fig. 2)

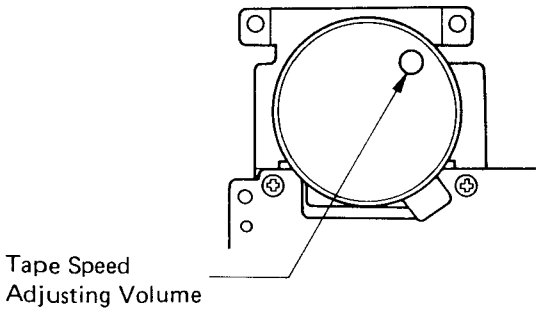


Fig. 2

HEAD AZIMUTH ADJUSTMENT

1. Play back the test tape (Example: TEAC MTT-115C 10 kHz/ 333 Hz) to adjust the head azimuth. Observe the output wave forms of the LEFT and RIGHT channels. First of all, play back the 10 kHz signal. Turn the azimuth adjusting screw for the R/P Head until the phase of the Left and Right channels becomes identical and their output levels are maximized. Then, play back the 333 Hz signal and check to see that the phase is identical to the phase of the 10 kHz signal. If necessary, repeat the adjustment. (Fig. 3,4)

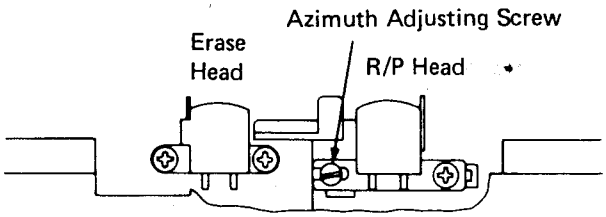
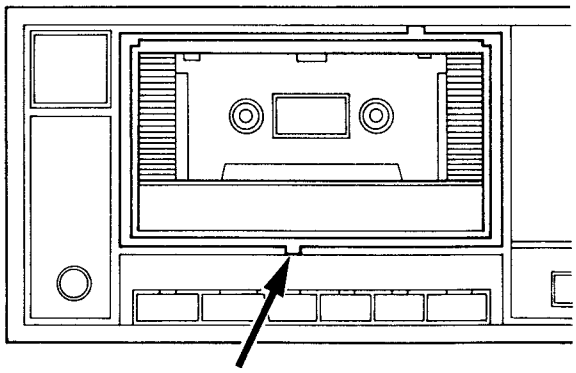


Fig. 3



Azimuth Adjusting Hole
Insert a screwdriver into this hole and perform the adjustment.

Fig. 4

CASSETTE DECK ELECTRICAL ADJUSTMENTS (Continued)

PLAYBACK GAIN ADJUSTMENT

1. Set the Dolby Switch to "OFF", and the Tape Select Switch to "NORMAL".
2. Play back the test tape (TEAC MTT-150) and connect the AC VTVM to TP01. Then, adjust P101 until the voltage becomes 775 mV.
3. Connect the AC VTVM to TP02 and adjust P201 until the voltage becomes 775 mV.

LEVEL METER ADJUSTMENT

1. Set the unit in the recording mode and apply the 1 kHz signal through LINE IN to the unit. Then, adjust the input volume until TP01 becomes 700 mV.
2. Adjust P104, so that the LED, showing 0 dB, on the LED meter lights up.
3. Adjust the input volume until TP02 becomes 700 mV as described above. Then, adjust P204, so that the LED, showing 0 dB, on the LED meter lights up.

BIAS ADJUSTMENT

1. Set the unit in the recording mode and the input volume to the maximum. Apply the 1 kHz signal at −43 dB through LINE IN to the unit.
2. Connect the AC VTVM to LINE OUT and set the Tape Select Switch to "NORMAL". Record the signal on the normal tape (AC223).
3. Change the input signal to 12.5 kHz. Adjust P103 and P203, so that the output deviation between the 1 kHz and 12.5 kHz signals becomes 0 dB±1 dB.
4. Set the Tape Select Switch to "CrO2". Record the chrome tape (AC512) and play it back. Insert the RT pin for chrome to the place where the output deviation between the 1 kHz and 12.5 kHz signals becomes 0 dB±1 dB.
5. Set the Tape Select Switch to "METAL". Record the metal tape (AC711) and play it back. Insert the RT pin for metal as described in item 4.

RECORDING GAIN ADJUSTMENT

1. Set the Tape Select Switch to "NORMAL" and put the normal tape (AC223) in the cassette compartment.
2. Set the unit in the recording mode and apply the 1 kHz signal at 100 mV through LINE IN to the unit. Then, adjust the input volume, so that the LED meter indicates −3 dB.
3. Play back the recorded portion of the tape. Adjust P102 and P202, so that the output from LINE OUT becomes 450 mV.

AMPLIFIER P.C.BOARD ADJUSTING POINTS

(TOP VIEW)

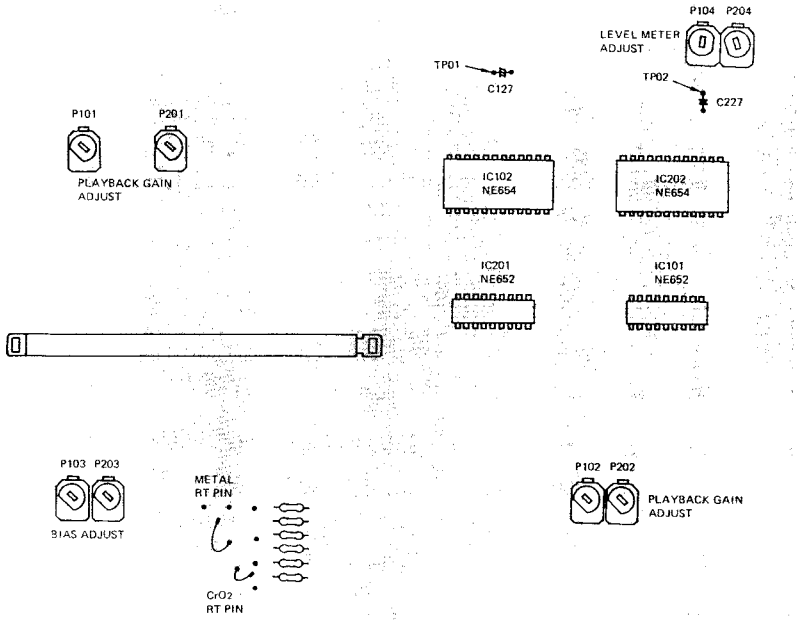


Fig. 5

DOLBY C-TYPE CIRCUIT OPERATION

The operation of the noise reduction system will be described with reference to block diagrams figs. 1 and 2 of an encoder and decoder respectively. Both the encoder and decoder comprise two active stages, called the high-level stage and the low-level stage.

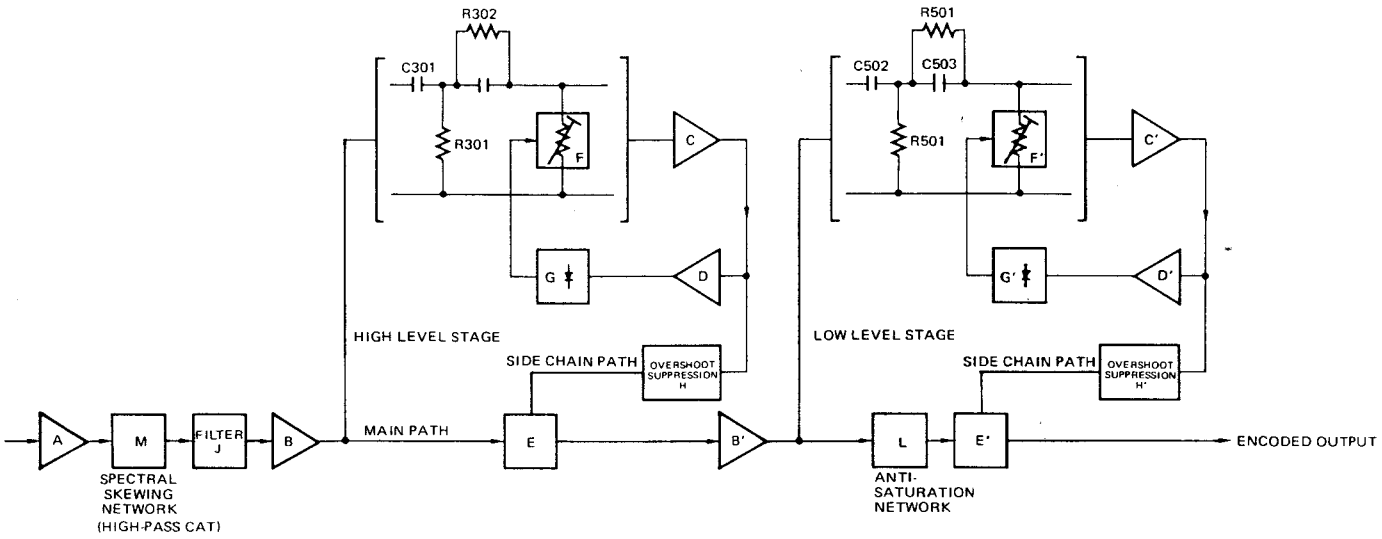


Fig. 1

Referring to fig. 1, signals enter the encoder via amplifier A and pass through a spectral skewing network M and low-pass filter J. The spectral skewing network reduces the level of extreme high-frequency signals passing to the rest of the processor. This desensitizes the decode processor to any high-frequency response errors in the tape recorder, therefore reducing any potential decoding errors of mid-frequency program when extremely high frequency signals are also present. There is also an effective improvement in the extremely high-frequency saturation characteristics of the recorder and a corresponding reduction in intermodulation distortion. The noise reduction action is essentially unimpaired because of the relative insensitivity of the human ear to noise above 10 kHz when the noise level is extremely low, as it is when the C-type system is used.

The low-pass filter attenuates all unwanted signals such as tape recorder bias, FM stereo, or television sound multiplex signals to a level such that they are below the thresholds of the compressors to avoid incorrect decoding.

The signal at the output of amplifier B enters the high-level stage and is split into two paths; one, the main path, provides an unaltered signal component directly to the output via adder E, while the other, known as the noise reduction side chain, controls the dynamic characteristics of the processor.

DOLBY C-TYPE CIRCUIT OPERATION (Continued)

The side chain contains a dynamic high-pass filter comprising capacitors C301 and C303 and resistors R301, R302 and the controlled resistance F. Under low-level signal conditions, F has a high value, and the first part of the filter (i.e. C301 and R301) then controls the response of the side chain.

The output of the filter is amplified by amplifier C and the resulting noise reduction signal is added to the main signal in adder E. The low-level gain of the side chain is such that the overall output is increased by 10 dB at about 1.5 kHz when the noise reduction signal is added. Thus the action of the high-level stage of the encoder is similar to that of the B-type system, (except that the turn-over frequency of the side-chain filter has been moved down by two octaves.

The side-chain output is amplified further by D, and then rectified and smoothed by a non-linear integrator (block G). The resulting DC control signal is fed back to vary resistance F. When this control voltage exceeds a threshold value, the resistance of F falls, causing the turn-over frequency of the second part of the filter (R302, C303 and F) to increase, thereby attenuating low- and medium-frequency signals in the side chain. With increasing input levels, the side-chain signal becomes a decreasing proportion of the main signal.

The output of the adder E is passed to a second, low-level stage of encoding which is similar (components B', C', etc.). The turn-over frequency of the second side-chain filter (C501, R501, etc.) is the same as that of the high-level stage. Thus the noise reduction action is built up to 20 dB in two successive actions, which avoids the serious problems inherent in attempting to achieve such figures in a single-stage circuit.

The control circuits of the low-level stage are set to provide a lower threshold than that of the high-level stage. Moreover, since the first part of the encoder raises the signal to the second part, the second receives a higher signal level than the first, which contributes to the fact that the low-level stage starts compressing first. Thus the second part is called the "low-level stage" and the first part is called "high-level stage".

A further difference between the stages is the introduction of an anti-saturation network L in the low-level section. Together with the spectral skewing network M, this ensures that the saturation level of the tape is always better with C-type noise reduction than without any noise reduction: the improvement in saturation level depends somewhat on the tape and recording bias, but is of the order of 4 dB at 10 kHz and 8 dB at 15 kHz.

The combined characteristics are shown in fig. 3, which shows the low-level characteristics of the C-type system encoder, and fig. 4, which is the encode processor characteristics for a wide range of input signals. (These drawings are representations only of the correct characteristics and are not accurate enough for detailed measurements to be taken from the graphs for circuit verification.)

The control circuits in the detectors G and G' use a non-linear smoothing scheme to provide fast response under transient conditions without the generation of modulation products. To reduce overshoots in the compressor output, the side chains include overshoot suppressors H and H', which operate only under extreme transient conditions during which the side chain is re-establishing its steady-state operating point. Thus, for a very short period, the encoded output consists of a large, pure signal (via the direct path) and a small clipped component (via the side chain). Under steady-state conditions, the overshoot suppressors H and H' are inoperative.

DOLBY C-TYPE CIRCUIT OPERATION (Continued)

For decoding (fig. 2), essentially the same circuitry is used, but in this case the side chain forms part of a double negative-feedback loop in which the noise reduction signal is subtracted from (instead of added to) the main path signal. The decoder characteristics are therefore complementary to the encoder characteristics. Referring to fig. 2 which shows the decoder, the inverters K and K' invert the phase of the signal feeding the side chain relative to that in the encoder. Networks N and P provide the inverse functions to the encoder networks L and M (respectively anti-saturation and spectral skewing). A flat frequency response is thereby maintained at all levels in the full encode-decode process.

Note that in the decode mode the small clipped side-chain component referred to above is now subtracted from the main signal, so compensating for the small brief distortion in the encoded signal. Thus the overall signal has very low dynamic distortion.

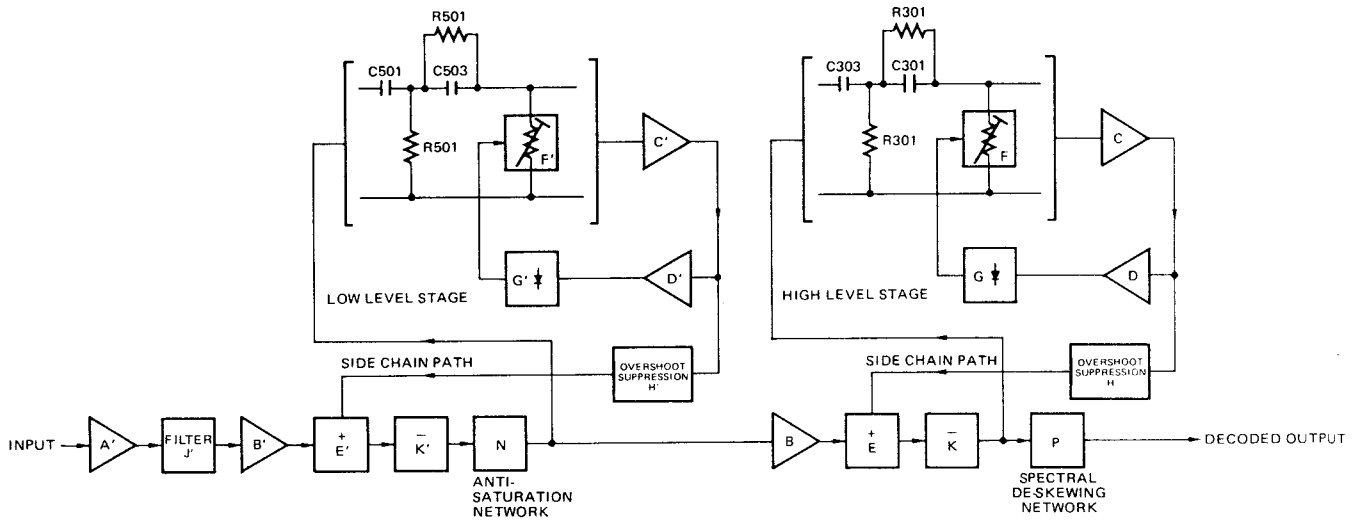


Fig. 2

DOLBY C-TYPE CIRCUIT OPERATION (Continued)

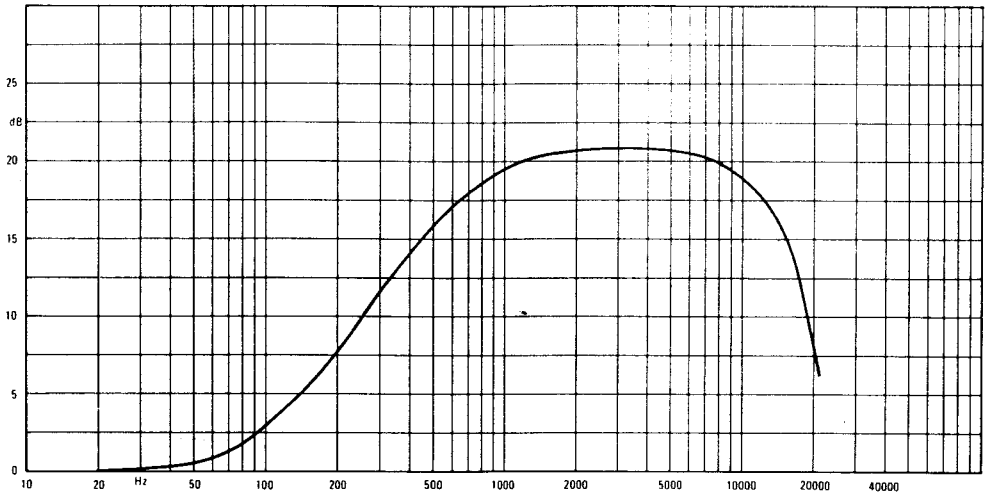


Fig. 3

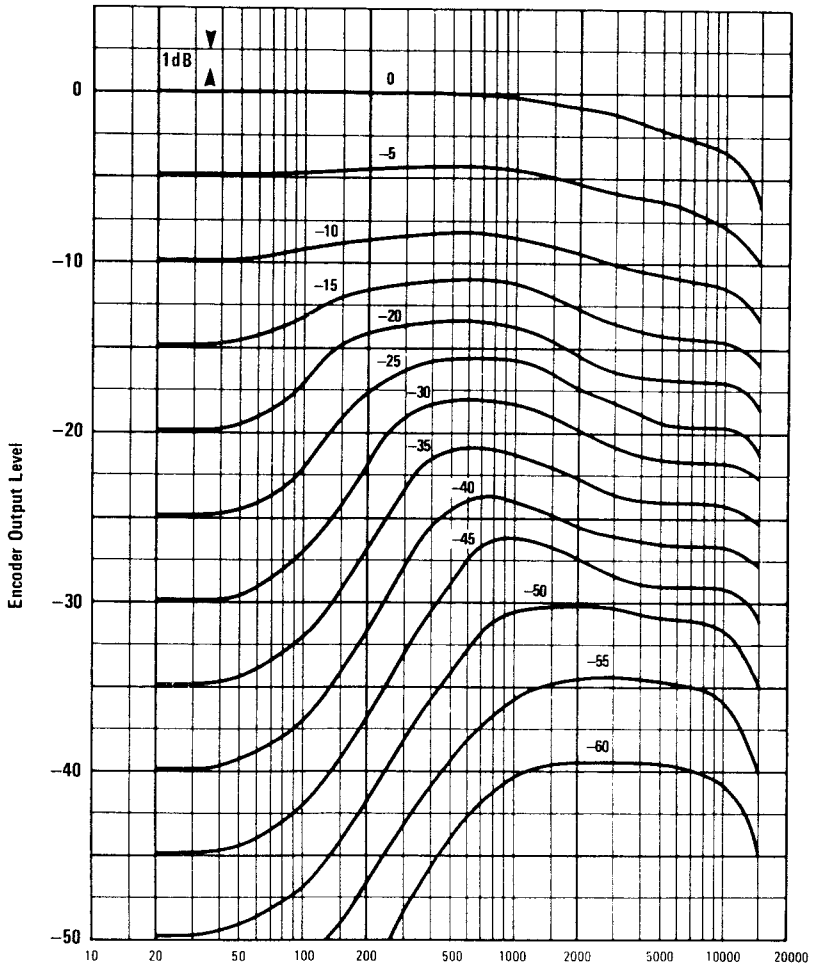
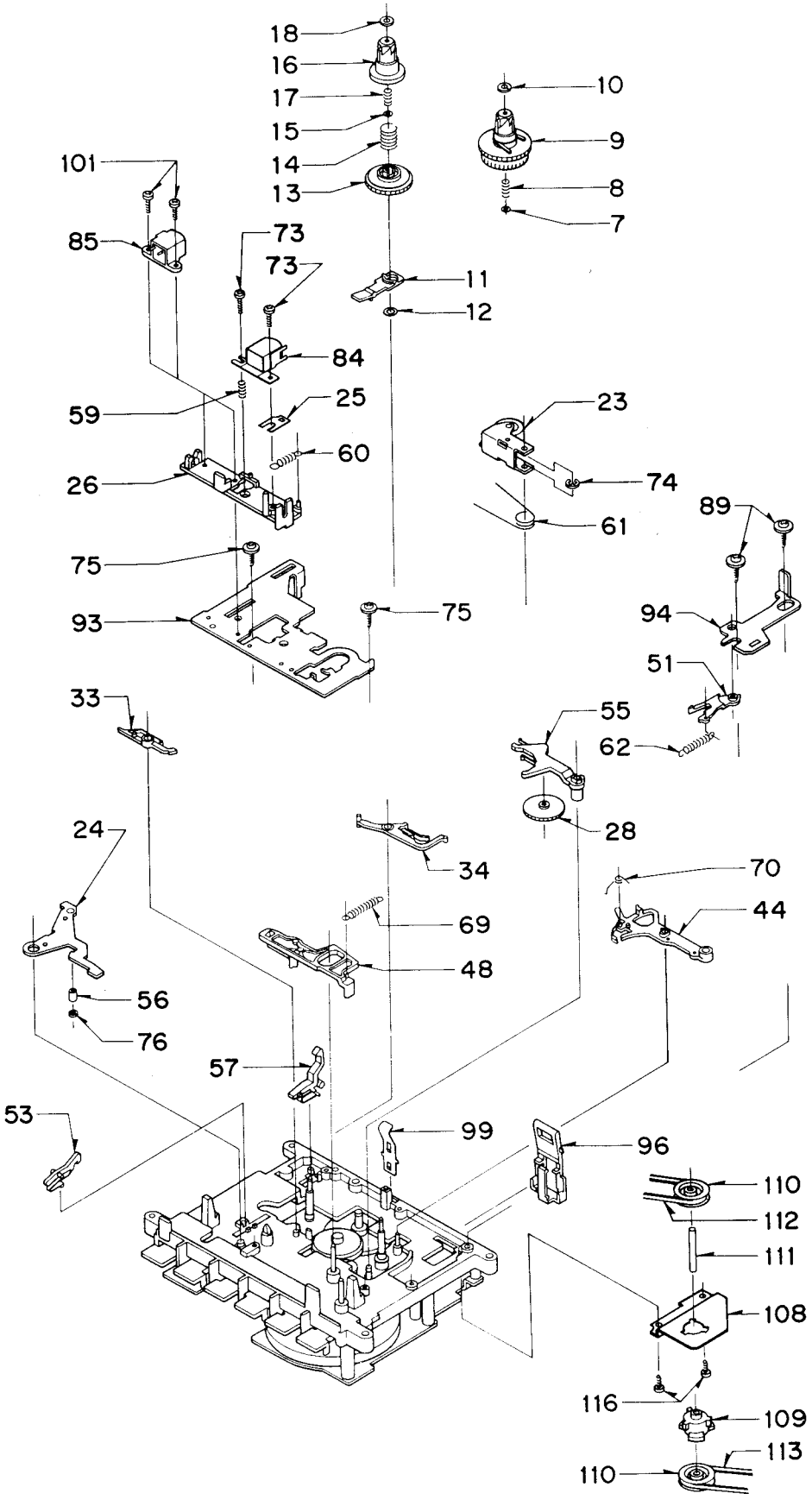
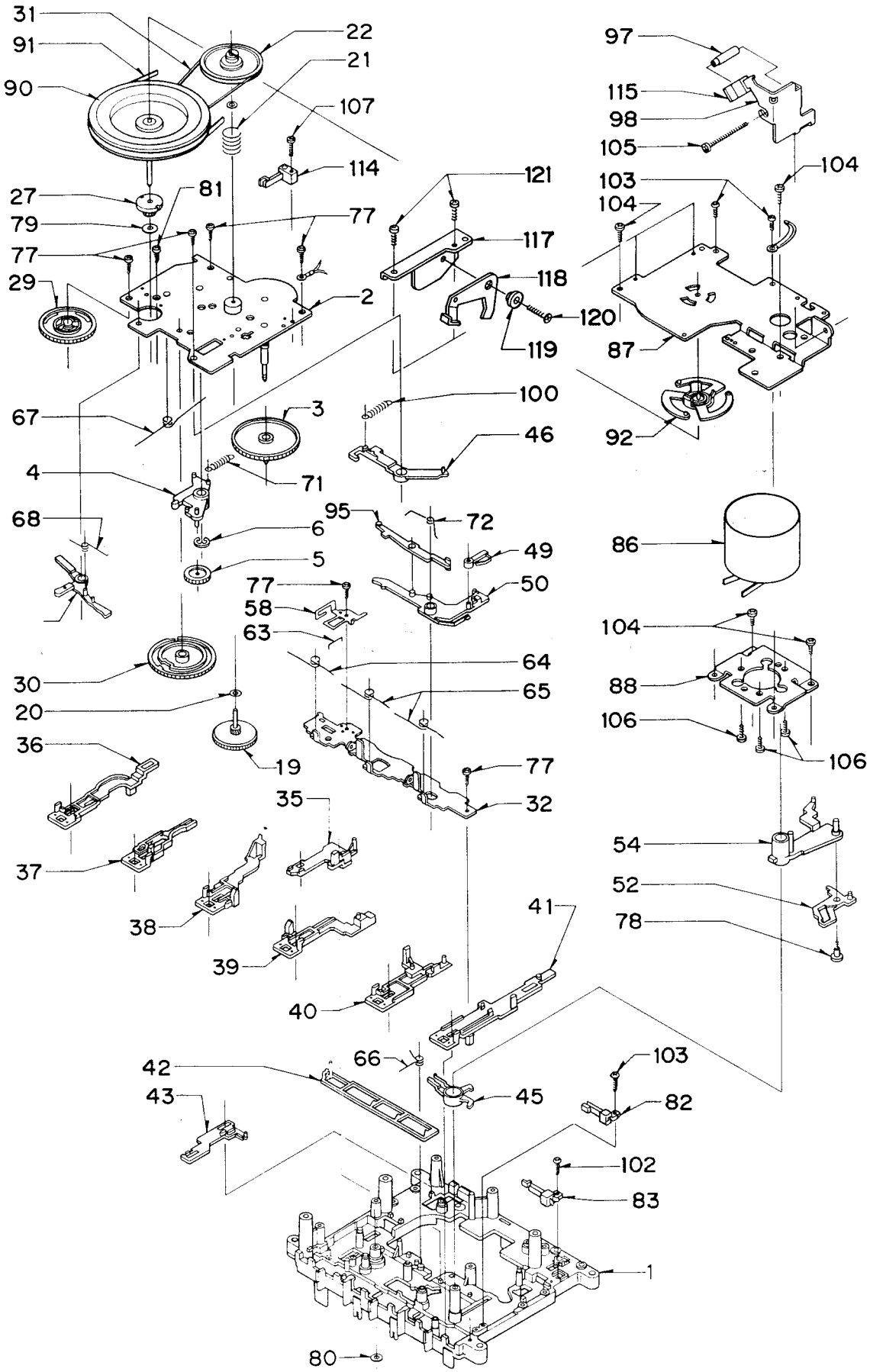


Fig. 4

MECHANISM EXPLODED VIEW



MECHANISM EXPLODED VIEW (Continued)



MECHANISM PARTS LIST

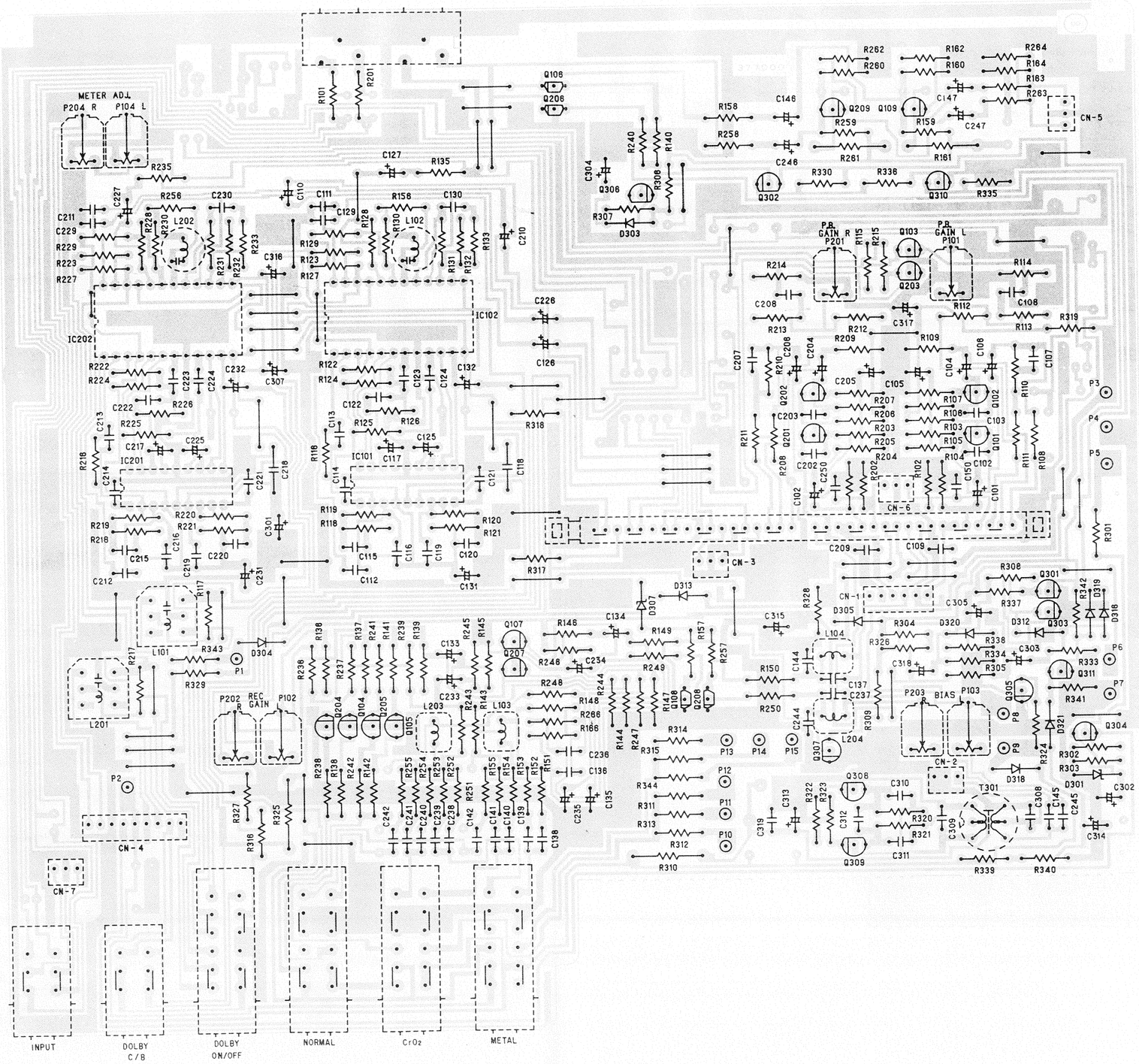
Ref. No.	Part No.	Description		Q'ty
	MECHANISM			
1	141 0 3119 21900	Chassis Assy		1
2	141 0 3119 21800	Plate Chassis Assy		1
3	141 2 5519 45600	Gear ASO		1
4	141 2 7439 30000	Arm Fastwind		1
5	141 2 5519 45100	Gear Fastwind		1
6	112 3 1303 00082	E Ring	M3.0	1
7	141 2 4539 27601	Washer		1
8	141 2 8559 00100	Spring Supply		1
9	141 2 5319 11500	Gear Reel Take-up		1
10	141 2 4539 15700	Washer		1
11	141 2 7419 80200	Lever Rewind		1
12	141 2 4539 28000	Washer		1
13	141 2 5319 11600	Gear Reel Supply		1
14	141 2 8519 67900	Spring Reel		1
15	141 2 4539 27601	Washer		1
16	141 2 5319 11700	Fin Reel Supply		1
17	141 2 8559 00100	Spring Supply		1
18	141 2 4539 15700	Washer		1
19	141 0 5519 09600	Friction Assy		1
20	141 2 4539 27601	Washer		2
21	141 2 8559 04700	Spring Pulley		1
22	141 2 5519 45700	Pulley Friction		1
23	141 0 5419 02201	Pinchroller Assy		1
24	141 0 7419 36900	Lever Rec Base Assy		1
25	141 2 3529 18102	Spacer Head		1
26	141 2 3529 35900	Spacer Head		1
27	141 2 5519 45200	Gear Flywheel		1
28	141 2 5519 45300	Gear Take-up		1
29	141 2 5519 45800	Gear Actuate Pause		1
30	141 2 5519 45900	Gear Actuate Play		1
31	141 2 5649 21200	Belt Wind		1
32	141 2 6139 14300	Frame Rod		1
33	141 2 7149 05600	Brake Supply Reel		1
34	141 2 7149 05700	Brake Take-up Reel		1
35	141 2 7319 52900	Rod Switch		1
36	141 2 7319 53000	Rod Stop		1
37	141 2 7319 53100	Rod Pause		1
38	141 2 7319 53200	Rod Fastwind		1
39	141 2 7319 53300	Rod Rewind		1
40	141 2 7319 53400	Rod Play		1
41	141 2 7319 53500	Rod Record		1
42	141 2 7319 53600	Plate Lock		1
43	141 2 7319 54900	Rod ASO		1
44	141 2 7419 80100	Lever ASO		1
45	141 2 7419 80400	Lever Lock Record		1
46	141 2 7419 80500	Lever Play Start		1
47	141 2 7419 80600	Lever Pause Start		1
48	141 2 7419 80700	Lever Base Slide		1
49	141 2 7419 80900	Lever Spring Stop Rec		1
50	141 2 7419 81000	Lever Stop Record		1
51	141 2 7419 81100	Lever Stop Eject		1
52	141 2 7419 81200	Lever Rec Select		1
53	141 2 7419 81300	Lever Cassette		1
54	141 2 7419 81400	Arm Record		1
55	141 2 7439 30100	Arm Take-up		1
56	141 2 8259 11100	Roller Rec		1
57	141 2 8419 11700	Interlock Lever		1
58	141 2 8539 46700	Spring Plate Lock		1
59	141 2 8559 00201	Spring Head		1
60	141 2 8549 18700	Spring Slide Base		1
61	141 2 8529 12500	Spring Pinchroller		1
62	141 2 8549 18500	Spring Eject		1
63	141 2 8529 12800	Spring Pause Latch		1
64	141 2 8529 12400	Spring Rod		1
65	141 2 8529 12401	Spring Pod FF		2
66	141 2 8529 12600	Spring Gear ACT Play		1
67	141 2 8529 12700	Spring Arm FF		1
68	141 2 8529 13300	Spring Lever Pause		1
69	141 2 8549 05500	Spring Lever Stop		1
70	141 2 8529 13200	Spring Sensor		1
71	141 2 8519 64900	Spring Arm Gear		2
72	141 2 8529 14200	Spring Stop Record		1
73	141 2 4219 30300	Screw, Bind Hd.	+M2.0x6	2
74	112 3 1302 00082	E Ring	M2.0	1
75	141 2 4219 13201	Screw Washer		2
76	141 2 4539 17500	Washer		1
77	143 3 1702 00618	Screw, Bind Hd. Tapping-B	+M2.0x6	6
78	141 2 4219 23000	Screw		1
79	141 2 4539 20900	Washer		1
80	141 2 4539 17600	Washer		1
81	143 3 1202 00818	Screw, Flat Hd. Tapping-B	+M2.0x8	1
82	4 2319 71863	Leaf Switch		1
83	4 2319 74550	Leaf Switch		1
84	4 2429 71670	R/P Head		1
85	4 2429 71880	Erase Head		1
86	141 0 3799 01100	Motor Assy		1
	4 5279 71230	Motor		1
	141 2 3799 04000	Pulley Motor		1
87	141 2 3519 61400	Support Flywheel		1
88	141 2 3519 61500	Bracket Motor		1
89	141 2 4219 05400	Screw Washer		2
90	141 2 5219 15000	Flywheel Capstan		1
91	141 2 5619 01800	Belt		1
92	141 2 5739 06100	Thrust Flywheel		1
93	141 2 7319 52801	Base Slide		1
94	141 2 7319 59200	Plate Eject		1
95	141 2 7419 80800	Lever Switch Cue Review		1
96	141 2 7419 84400	Lock Lid Cassette		1
97	141 2 7539 23500	Post Lever R/P Switch		1
98	141 2 8419 12600	Lever R/P Switch		1
99	141 2 8539 47900	Spring Cassette		1
100	141 2 8549 16900	Spring Lever Play		1
101	141 2 4219 30300	Screw, Bind Hd.	+M2.0x6	2
102	143 3 1702 00818	Screw, Bind Hd. Tapping-B	+M2.0x8	2
103	103 3 1302 60511	Screw, Pan Hd. Tapping-2	+M2.6x5	2
104	143 3 1702 60818	Screw, Bind Hd. Tapping-B	+M2.6x8	4
105	101 3 1302 62511	Screw, Pan Hd.	+M2.6x25	1
106	141 2 4219 17900	Screw +PMS M2.6X2.7		3
107	143 3 1302 00811	Screw, Pan Hd. Tapping-B	+M2.0x8	1
108	141 2 3519 62000	Bracket Holder Pulley		1
109	141 2 5729 15800	Holder Pulley		1
110	141 2 6619 02500	Pulley Step-up		2
111	141 2 5529 11700	Shaft Step-up Pulley		1
112	141 2 5649 05900	Belt		1
113	141 2 5649 21500	Belt Counter		1
114	4 2319 74360	Leaf Switch		1
115	141 2 4629 00900	Cap Lever Click Rec		1
116	103 3 1702 60811	Screw, Bind Hd. Tapping-2	+M2.6x8	2
117	141 2 3519 68500	Bracket Eject		1
118	141 2 7419 88901	Lever Eject		1
119	141 2 3529 16000	Spacer Lever Select		1
120	101 3 1202 60611	Screw, Flat Hd.	+M2.6x6	1
121	143 3 1702 60611	Screw, Bind Hd. Tapping-B	+M2.6x6	2

NOTES:

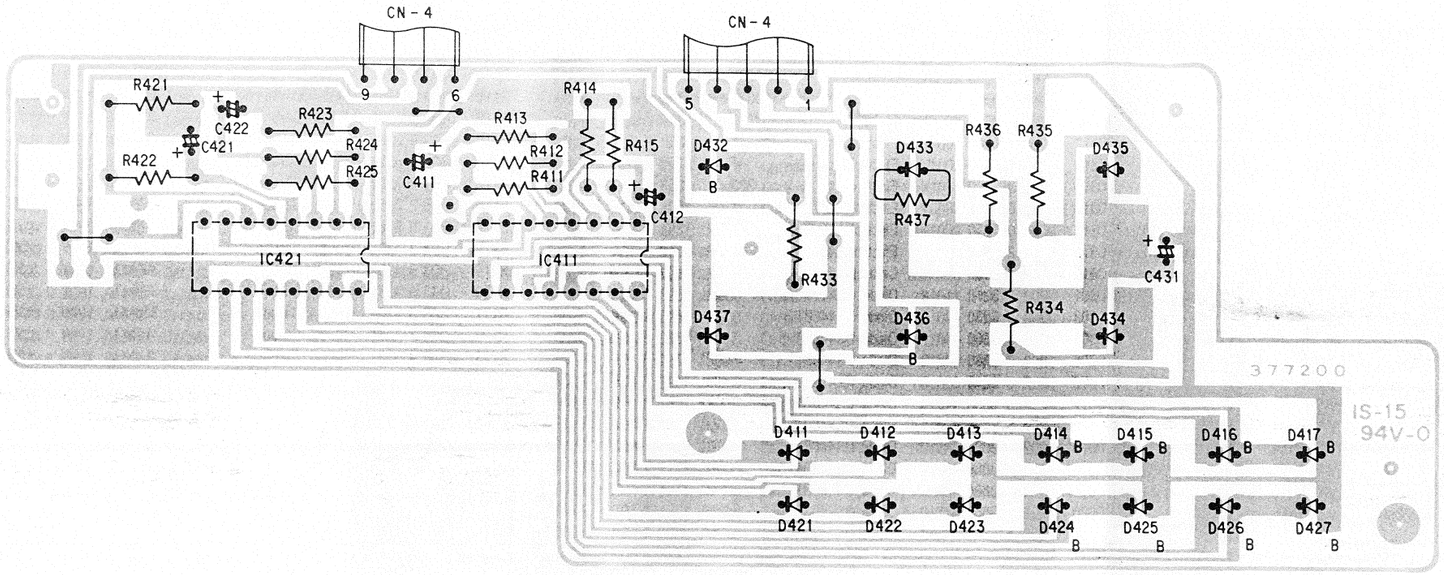
1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

AMPLIFIER P.C.BOARD

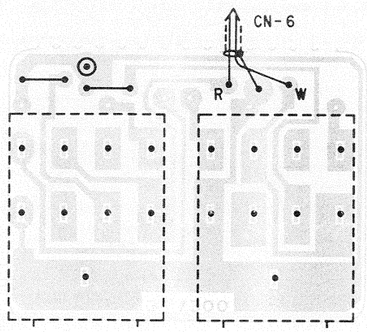
(BOTTOM VIEW)



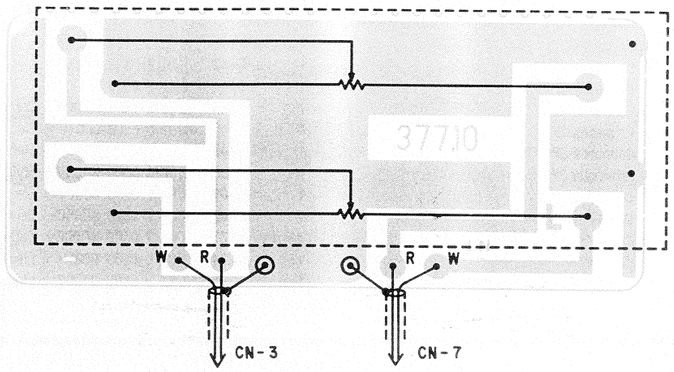
L.E.D. METER P.C.BOARD
(BOTTOM VIEW)



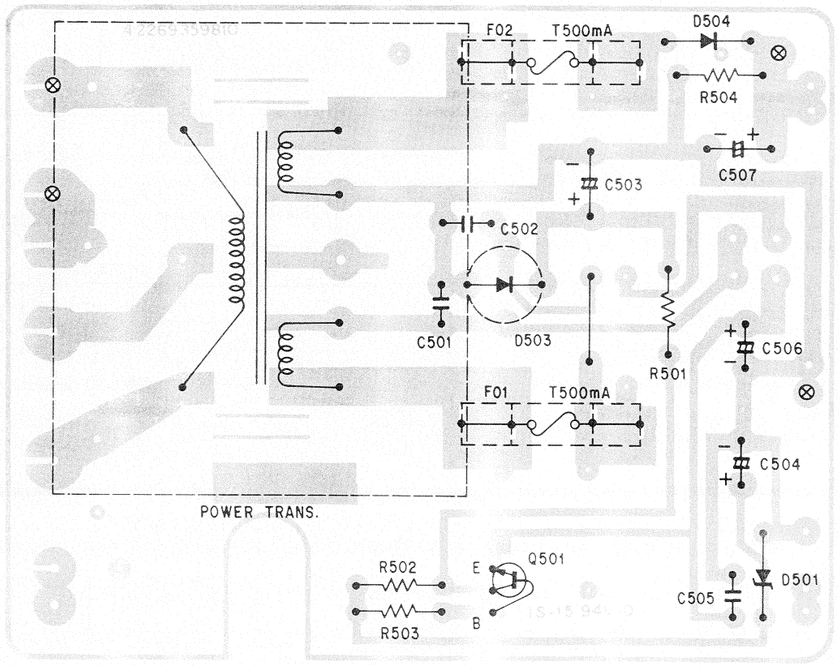
MIC P.C.BOARD
(BOTTOM VIEW)



VOLUME P.C.BOARD
(BOTTOM VIEW)



POWER SUPPLY P.C.BOARD
(BOTTOM VIEW)



PARTS LIST

Ref. No.	Part No.	Description			Q'ty
	AMPLIFIER P.C.B. ASSY				
	4 1329 78222	Amplifier P.C.B. Assy			1
	4 2359 75361	4P Pin Jack			1
	4 2319 75361	Slide Switch			1
	4 2369 70740	Pin RT			15
	4 2319 75690	Select Switch			1
CN01	4 2369 71452	Connector 6P			1
CN02	4 2369 71482	Connector 3P			1
CN03	4 2369 71482	Connector 3P			1
CN04	4 2369 72910	Connector 9P			1
CN05	4 2369 71482	Connector 3P			1
CN06	4 2369 71482	Connector 3P			1
CN07	4 2369 71482	Connector 3P			1
L101	4 2729 70341	Dolby Filter			1
L102	4 2729 70560	Coil Filter			1
L103	4 2729 70260	Coil 15mH			1
L104	4 2729 70290	Coil 33mH			1
L201	4 2729 70341	Dolby Filter			1
L202	4 2729 70560	Coil Filter			1
L203	4 2729 70260	Coil 15mH			1
L204	4 2729 70290	Coil 33mH			1
T302	4 2729 70570	Coil OSC			1
P101	4 2229 72967	Potentiometer 10K			1
P102	4 2229 72970	Potentiometer 50K			1
P103	4 2229 72971	Potentiometer 100K			1
P104	4 2229 72968	Potentiometer 20K			1
P201	4 2229 72967	Potentiometer 10K			1
P202	4 2229 72970	Potentiometer 50K			1
P203	4 2229 72971	Potentiometer 100K			1
P204	4 2229 72968	Potentiometer 20K			1
C101	CD4 7 5250 0000V	Electrolytic	4.7μF	25V	1
C102	CC4 7 1500 KE00C	Ceramic	470pF	50V ±10%	1
C103	CC4 7 0500 KD00C	Ceramic	47pF	50V ±10%	1
C104	CD1 0 6500 0001V	Electrolytic	10μF	50V	1
C105	CD2 2 6100 0000V	Electrolytic	22μF	10V	1
C106	CD1 0 6250 0000V	Electrolytic	10μF	25V	1
C107	CM1 8 3500 K00SV	Mylar	0.018μF	50V ±10%	1
C108	CM1 8 3500 K00SV	Mylar	0.018μF	50V ±10%	1
C109	CC4 7 1500 KE00C	Ceramic	470pF	50V ±10%	1
C110	CD1 0 5500 0000V	Electrolytic	1μF	50V	1
C111	CC2 2 1500 KD00C	Ceramic	220pF	50V ±10%	1
C112	CM1 5 4500 J00TV	Mylar	0.15μF	50V ±5%	1
C113	CM6 8 3500 K00SV	Mylar	0.068μF	50V ±10%	1
C114	CM4 7 3500 K00SV	Mylar	0.047μF	50V ±10%	1
C115	CM3 3 3500 K00SV	Mylar	0.033μF	50V ±10%	1
C116	CM1 0 4500 J00TV	Mylar	0.1μF	50V ±5%	1
C117	CD1 0 6250 0001V	Electrolytic	10μF	25V	1
C118	CC1 0 4500 ZG00C	Ceramic	0.1μF	50V +80,-20%	1
C119	CM1 0 4500 J00TV	Mylar	0.1μF	50V ±5%	1
C120	CM3 3 3500 K00SV	Mylar	0.033μF	50V ±10%	1
C121	CM2 2 4500 J00TV	Mylar	0.22μF	50V ±5%	1
C122	CM4 7 2500 K00SV	Mylar	0.0047μF	50V ±10%	1
C123	CM3 3 3500 K00SV	Mylar	0.033μF	50V ±10%	1
C124	CM4 7 2500 K00SV	Mylar	0.0047μF	50V ±10%	1
C125	CD1 0 6250 0000V	Electrolytic	10μF	25V	1
C126	CD1 0 5500 0000V	Electrolytic	1μF	50V	1
C127	CD1 0 6250 0000V	Electrolytic	10μF	25V	1
C129	CC4 7 0500 KD00C	Ceramic	47pF	50V ±10%	1
C130	CM1 0 3500 K00SV	Mylar	0.01μF	50V ±10%	1
C131	CD2 2 7160 0001V	Electrolytic	220μF	16V	1
C132	CD1 0 6250 0001V	Electrolytic	10μF	25V	1
C133	CD4 7 5250 0000V	Electrolytic	4.7μF	25V	1
C134	CD1 0 6250 0001V	Electrolytic	10μF	25V	1
C135	CD4 7 6100 0001V	Electrolytic	47μF	10V	1

Ref. No.	Part No.	Description			Q'ty
C136	CM1 0 4500 K00SV	Mylar	0.1μF	50V ±10%	1
C137	CC6 8 0500 KD00C	Ceramic	68pF	50V ±10%	1
C138	CM3 9 2500 K00SV	Mylar	0.0039μF	50V ±10%	1
C139	CM2 2 2500 K00SV	Mylar	0.0022μF	50V ±10%	1
C140	CM4 7 2500 K00SV	Mylar	0.0047μF	50V ±10%	1
C141	CM1 8 2500 K00SV	Mylar	0.0018μF	50V ±10%	1
C142	CM3 9 2500 K00SV	Mylar	0.0039μF	50V ±10%	1
C144	CC4 7 1500 KD00C	Ceramic	470pF	50V ±10%	1
C145	CC1 0 1500 KD00C	Ceramic	100pF	50V ±10%	1
C146	CD1 0 6500 0001V	Electrolytic	10μF	50V	1
C147	CD4 7 6160 0001V	Electrolytic	47μF	16V	1
C150	CM1 0 3500 K00SV	Mylar	0.01μF	50V ±10%	1
C201	CD4 7 5250 0000V	Electrolytic	4.7μF	25V	1
C202	CC4 7 1500 KE00C	Ceramic	470pF	50V ±10%	1
C203	CC4 7 0500 KD00C	Ceramic	47pF	50V ±10%	1
C204	CD1 0 6500 0001V	Electrolytic	10μF	50V	1
C205	CD2 2 6100 0000V	Electrolytic	22μF	10V	1
C206	CD1 0 6250 0000V	Electrolytic	10μF	25V	1
C207	CM1 8 3500 K00SV	Mylar	0.018μF	50V ±10%	1
C208	CM1 8 3500 K00SV	Mylar	0.018μF	50V ±10%	1
C209	CC4 7 1500 KE00C	Ceramic	470pF	50V ±10%	1
C210	CD1 0 5500 0000V	Electrolytic	1μF	50V	1
C211	CC2 2 1500 KD00C	Ceramic	220pF	50V ±10%	1
C212	CM1 5 4500 J00TV	Mylar	0.15μF	50V ±5%	1
C213	CM6 8 3500 K00SV	Mylar	0.068μF	50V ±10%	1
C214	CM4 7 3500 K00SV	Mylar	0.047μF	50V ±10%	1
C215	CM3 3 3500 K00SV	Mylar	0.033μF	50V ±10%	1
C216	CM1 0 4500 J00TV	Mylar	0.1μF	50V ±5%	1
C217	CD1 0 6250 0001V	Electrolytic	10μF	25V	1
C218	CC1 0 4500 ZG00C	Ceramic	0.1μF	50V +80,-20%	1
C219	CM1 0 4500 J00TV	Mylar	0.1μF	50V ±5%	1
C220	CM3 3 3500 K00SV	Mylar	0.033μF	50V ±10%	1
C221	CM2 2 4500 J00TV	Mylar	0.22μF	50V ±5%	1
C222	CM4 7 2500 K00SV	Mylar	0.0047μF	50V ±10%	1
C223	CM3 3 3500 K00SV	Mylar	0.033μF	50V ±10%	1
C224	CM4 7 2500 K00SV	Mylar	0.0047μF	50V ±10%	1
C225	CD1 0 6250 0000V	Electrolytic	10μF	25V	1
C226	CD1 0 5500 0000V	Electrolytic	1μF	50V	1
C227	CD1 0 6250 0000V	Electrolytic	10μF	25V	1
C229	CC4 7 0500 KD00C	Ceramic	47pF	50V ±10%	1
C230	CM1 0 3500 K00SV	Mylar	0.01μF	50V ±10%	1
C231	CD2 2 7160 0001V	Electrolytic	220μF	16V	1
C232	CD1 0 6250 0001V	Electrolytic	10μF	25V	1
C233	CD4 7 5250 0000V	Electrolytic	4.7μF	25V	1
C234	CD1 0 6250 0001V	Electrolytic	10μF	25V	1
C235	CD4 7 6100 0001V	Electrolytic	47μF	10V	1
C236	CM1 0 4500 K00SV	Mylar	0.1μF	50V ±10%	1
C237	CC6 8 0500 KD00C	Ceramic	68pF	50V ±10%	1
C238	CM3 9 2500 K00SV	Mylar	0.0039μF	50V ±10%	1
C239	CM2 2 2500 K00SV	Mylar	0.0022μF	50V ±10%	1
C240	CM4 7 2500 K00SV	Mylar	0.0047μF	50V ±10%	1
C241	CM1 8 2500 K00SV	Mylar	0.0018μF	50V ±10%	1
C242	CM3 9 2500 K00SV	Mylar	0.0039μF	50V ±10%	1
C244	CC4 7 1500 KD00C	Ceramic	470pF	50V ±10%	1
C245	CC1 0 1500 KD00C	Ceramic	100pF	50V ±10%	1
C246	CD1 0 6500 0001V	Electrolytic	10μF	50V	1
C247	CD4 7 6160 0001V	Electrolytic	47μF	16V	1
C250	CM1 0 3500 K00SV	Mylar	0.01μF	50V ±10%	
C301	CD3 3 7160 0001V	Electrolytic	330μF	16V	
C302	CD3 3 6160 0001V	Electrolytic	33μF	16V	
C303	CD1 0 6500 0001V	Electrolytic	10μF	50V	1
C304	CD2 2 6250 0001V	Electrolytic	22μF	25V	1
C305	CD1 0 7100 0000V	Electrolytic	100μF	10V	1
C307	CD1 0 6250 0000V	Electrolytic	10μF	25V	1

PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
C308	CP1 0 3201 K000V	Polypropylen	0.01μF	200V	±10%	1
C309	CM1 0 3500 K00SV	Mylar	0.01μF	50V	±10%	1
C310	CM3 3 2500 K00SV	Mylar	0.0033μF	50V	±10%	1
C311	CM3 3 2500 K00SV	Mylar	0.0033μF	50V	±10%	1
C312	CM1 0 3500 K00SV	Mylar	0.01μF	50V	±10%	1
C313	CD1 0 5500 0001V	Electrolytic	1μF	50V		1
C314	CD4 7 6100 0001V	Electrolytic	47μF	10V		1
C315	CD3 3 7250 0001V	Electrolytic	330μF	25V		1
C316	CD1 0 5500 0000V	Electrolytic	1μF	50V		1
C317	CD1 0 7250 0001V	Electrolytic	100μF	25V		1
C318	CD2 2 6250 0001V	Electrolytic	22μF	25V		1
C319	CC2 2 2500 KE00C	Ceramic	0.0022μF	50V	±10%	1
D301	202 5 3210 11012	Diode, GZA11Y				1
D303	202 5 3880 44810	Diode, DS448BT				1
D304	202 5 3880 44810	Diode, DS448BT				1
D305	202 5 3880 44810	Diode, DS448BT				1
D307	202 5 3210 05610	Diode, GZA5.6L				1
D312	202 5 3880 44810	Diode, DS448BT				1
D313	202 5 3880 44810	Diode, DS448BT				1
D316	202 5 3880 44810	Diode, DS448BT				1
D318	202 5 3880 44810	Diode, DS448BT				1
D319	202 5 3880 44810	Diode, DS448BT				1
D320	202 5 3880 44810	Diode, DS448BT				1
D321	202 5 3880 44810	Diode, DS448BT				1
IC101	4 2069 71690	IC NE652				1
IC102	4 2069 71700	IC NE654				1
IC201	4 2069 71690	IC NE652				1
IC202	4 2069 71700	IC NE654				1
Q101	203 5 5251 57169	TR 2SC1571FL				1
Q102	203 5 5251 57169	TR 2SC1571FL				1
Q103	4 2039 70960	TR 2SC1684 Q,R				1
Q104	4 2039 70960	TR 2SC1684 Q,R				1
Q105	4 2039 70960	TR 2SC1684 Q,R				1
Q106	203 5 4921 01260	TR 2SD1012 F				1
Q107	203 5 5251 57169	TR 2SC1571FL				1
Q108	203 5 4921 01260	TR 2SD1012 F				1
Q109	4 2039 70960	TR 2SC1684 Q,R				1
Q201	203 5 5251 57169	TR 2SC1571FL				1
Q202	203 5 5251 57169	TR 2SC1571FL				1
Q203	4 2039 70960	TR 2SC1684 Q,R				1
Q204	4 2039 70960	TR 2SC1684 Q,R				1
Q205	4 2039 70960	TR 2SC1684 Q,R				1
Q206	203 5 4921 01260	TR 2SD1012 F				1
Q207	203 5 5251 57169	TR 2SC1571FL				1
Q208	203 5 4921 01260	TR 2SD1012 F				1
Q209	4 2039 70960	TR 2SC1684 Q,R				1
Q301	4 2039 70960	TR 2SC1684 Q,R				1
Q302	203 5 7200 60850	TR 2SA608E,F				1
Q303	4 2039 70960	TR 2SC1684 Q,R				1
Q304	203 5 6900 40060	TR 2SD400F				1
Q305	4 2039 70960	TR 2SC1684 Q,R				1
Q306	203 5 7200 60850	TR 2SA608E,F				1
Q307	4 2039 70960	TR 2SC1684 Q,R				1
Q308	203 5 4570 73460	TR 2SD734F,G				1
Q309	203 5 4570 73460	TR 2SD734F,G				1
Q310	4 2039 70960	TR 2SC1684 Q,R				1
Q311	4 2039 70960	TR 2SC1684 Q,R				1
R101	RD2 7 3251 JM000	Carbon	27kΩ	1/4W	±5%	1
R102	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	±5%	1
R103	RD1 8 4251 JM000	Carbon	180kΩ	1/4W	±5%	1
R104	RD1 8 4251 JM000	Carbon	180kΩ	1/4W	±5%	1
R105	RD5 6 0251 JM000	Carbon	56Ω	1/4W	±5%	1
R106	RD1 0 3251 JM000	Carbon	10kΩ	1/4W	±5%	1
R107	RD1 0 2251 JM000	Carbon	1kΩ	1/4W	±5%	1

Ref. No.	Part No.	Description				Q'ty
R108	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	±5%	1
R109	RD4 7 3251 JM000	Carbon	47kΩ	1/4W	±5%	1
R110	RD3 9 4251 JM000	Carbon	390kΩ	1/4W	±5%	1
R111	RD6 2 2251 JM000	Carbon	6.2kΩ	1/4W	±5%	1
R112	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	±5%	1
R113	RD3 9 2251 JM000	Carbon	3.9kΩ	1/4W	±5%	1
R114	RD1 0 5251 JM000	Carbon	1MΩ	1/4W	±5%	1
R115	RD1 0 3251 JM000	Carbon	10kΩ	1/4W	±5%	1
R116	RD8 2 3251 JM000	Carbon	82kΩ	1/4W	±5%	1
R117	RD1 0 5251 JM000	Carbon	1MΩ	1/4W	±5%	1
R118	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	±5%	1
R119	RD3 9 4251 JM000	Carbon	390kΩ	1/4W	±5%	1
R120	RD3 9 4251 JM000	Carbon	390kΩ	1/4W	±5%	1
R121	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	±5%	1
R122	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	±5%	1
R123	RD2 4 2251 JM000	Carbon	2.4kΩ	1/4W	±5%	1
R124	RD1 2 3251 JM000	Carbon	12kΩ	1/4W	±5%	1
R125	RD7 5 3251 JS000	Carbon	75kΩ	1/4W	±5%	1
R126	RD4 7 3251 JM000	Carbon	47kΩ	1/4W	±5%	1
R127	RD5 6 2251 JM000	Carbon	5.6kΩ	1/4W	±5%	1
R128	RD6 8 2251 JM000	Carbon	6.8kΩ	1/4W	±5%	1
R129	RD6 8 2251 JM000	Carbon	6.8kΩ	1/4W	±5%	1
R130	RD1 0 2251 JM000	Carbon	1kΩ	1/4W	±5%	1
R131	RD6 8 3251 JM000	Carbon	68kΩ	1/4W	±5%	1
R132	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	±5%	1
R133	RD5 1 2251 JM000	Carbon	5.1kΩ	1/4W	±5%	1
R135	RD1 8 2251 JM000	Carbon	1.8kΩ	1/4W	±5%	1
R136	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	±5%	1
R137	RD2 7 2251 JM000	Carbon	2.7kΩ	1/4W	±5%	1
R138	RD1 8 3251 JM000	Carbon	18kΩ	1/4W	±5%	1
R139	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	±5%	1
R140	RD6 8 2251 JM000	Carbon	6.8kΩ	1/4W	±5%	1
R141	RD6 8 2251 JM000	Carbon	6.8kΩ	1/4W	±5%	1
R142	RD1 8 3251 JM000	Carbon	18kΩ	1/4W	±5%	1
R143	RD1 2 3251 JM000	Carbon	12kΩ	1/4W	±5%	1
R144	RD4 7 3251 JM000	Carbon	47kΩ	1/4W	±5%	1
R145	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	±5%	1
R146	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	±5%	1
R147	RD5 6 1251 JM000	Carbon	560Ω	1/4W	±5%	1
R148	RD2 2 3251 JM000	Carbon	22kΩ	1/4W	±5%	1
R149	RD8 2 2251 JM000	Carbon	8.2kΩ	1/4W	±5%	1
R150	RD3 9 2251 JM000	Carbon	3.9kΩ	1/4W	±5%	1
R151	RD2 2 1251 JM000	Carbon	220Ω	1/4W	±5%	1
R152	RD3 9 3251 JM000	Carbon	39kΩ	1/4W	±5%	1
R153	RD4 7 0251 JM000	Carbon	47Ω	1/4W	±5%	1
R154	RD1 5 3251 JM000	Carbon	15kΩ	1/4W	±5%	1
R155	RD4 7 0251 JM000	Carbon	47Ω	1/4W	±5%	1
R156	RD2 2 4251 JM000	Carbon	220kΩ	1/4W	±5%	1
R157	RD1 0 3251 JM000	Carbon	10kΩ	1/4W	±5%	1
R158	RD8 2 2251 JM000	Carbon	8.2kΩ	1/4W	±5%	1
R159	RD8 2 3251 JM000	Carbon	82kΩ	1/4W	±5%	1
R160	RD8 2 2251 JM000	Carbon	8.2kΩ	1/4W	±5%	1
R161	RH5 6 1501 KZ000	Metal	560Ω	1/2W	±10%	1
R162	RD2 2 0251 JM000	Carbon	22Ω	1/4W	±5%	1
R163	RD6 8 0251 JM000	Carbon	68Ω	1/4W	±5%	1
R164	RD1 0 2251 JM000	Carbon	1kΩ	1/4W	±5%	1
R166	RD6 8 3251 JM000	Carbon	68kΩ	1/4W	±5%	1
R201	RD2 7 3251 JM000	Carbon	27kΩ	1/4W	±5%	1
R202	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	±5%	1
R203	RD1 8 4251 JM000	Carbon	180kΩ	1/4W	±5%	1
R204	RD1 8 4251 JM000	Carbon	180kΩ	1/4W	±5%	1
R205	RD5 6 0251 JM000	Carbon	56Ω	1/4W	±5%	1
R206	RD1 0 3251 JM000	Carbon	10kΩ	1/4W	±5%	1
R207	RD1 0 2251 JM000	Carbon	1kΩ	1/4W	±5%	1

PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
R208	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	±5%	1
R209	RD4 7 3251 JM000	Carbon	47kΩ	1/4W	±5%	1
R210	RD3 9 4251 JM000	Carbon	390kΩ	1/4W	±5%	1
R211	RD6 2 2251 JM000	Carbon	6.2kΩ	1/4W	±5%	1
R212	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	±5%	1
R213	RD3 9 2251 JM000	Carbon	3.9kΩ	1/4W	±5%	1
R214	RD1 0 5251 JM000	Carbon	1MΩ	1/4W	±5%	1
R215	RD1 0 3251 JM000	Carbon	10kΩ	1/4W	±5%	1
R216	RD8 2 3251 JM000	Carbon	82kΩ	1/4W	±5%	1
R217	RD1 0 5251 JM000	Carbon	1MΩ	1/4W	±5%	1
R218	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	±5%	1
R219	RD3 9 4251 JM000	Carbon	390kΩ	1/4W	±5%	1
R220	RD3 9 4251 JM000	Carbon	390kΩ	1/4W	±5%	1
R221	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	±5%	1
R222	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	±5%	1
R223	RD2 4 2251 JM000	Carbon	2.4kΩ	1/4W	±5%	1
R224	RD1 2 3251 JM000	Carbon	12kΩ	1/4W	±5%	1
R225	RD7 5 3251 JM000	Carbon	75kΩ	1/4W	±5%	1
R226	RD4 7 3251 JM000	Carbon	47kΩ	1/4W	±5%	1
R227	RD5 6 2251 JM000	Carbon	5.6kΩ	1/4W	±5%	1
R228	RD6 8 2251 JM000	Carbon	6.8kΩ	1/4W	±5%	1
R229	RD6 8 2251 JM000	Carbon	6.8kΩ	1/4W	±5%	1
R230	RD1 0 2251 JM000	Carbon	1kΩ	1/4W	±5%	1
R231	RD6 8 3251 JM000	Carbon	68kΩ	1/4W	±5%	1
R232	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	±5%	1
R233	RD5 1 2251 JM000	Carbon	5.1kΩ	1/4W	±5%	1
R235	RD1 8 2251 JM000	Carbon	1.8kΩ	1/4W	±5%	1
R236	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	±5%	1
R237	RD2 7 2251 JM000	Carbon	2.7kΩ	1/4W	±5%	1
R238	RD1 8 3251 JM000	Carbon	18kΩ	1/4W	±5%	1
R239	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	±5%	1
R240	RD6 8 2251 JM000	Carbon	6.8kΩ	1/4W	±5%	1
R241	RD6 8 2251 JM000	Carbon	6.8kΩ	1/4W	±5%	1
R242	RD1 8 3251 JM000	Carbon	18kΩ	1/4W	±5%	1
R243	RD1 2 3251 JM000	Carbon	12kΩ	1/4W	±5%	1
R244	RD4 7 3251 JM000	Carbon	47kΩ	1/4W	±5%	1
R245	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	±5%	1
R246	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	±5%	1
R247	RD5 6 1251 JM000	Carbon	560Ω	1/4W	±5%	1
R248	RD2 2 3251 JM000	Carbon	22kΩ	1/4W	±5%	1
R249	RD8 2 2251 JM000	Carbon	8.2kΩ	1/4W	±5%	1
R250	RD3 9 2251 JM000	Carbon	3.9kΩ	1/4W	±5%	1
R251	RD2 2 1251 JM000	Carbon	220Ω	1/4W	±5%	1
R252	RD3 9 3251 JM000	Carbon	39kΩ	1/4W	±5%	1
R253	RD4 7 0251 JM000	Carbon	47Ω	1/4W	±5%	1
R254	RD1 5 3251 JM000	Carbon	15kΩ	1/4W	±5%	1
R255	RD4 7 0251 JM000	Carbon	47Ω	1/4W	±5%	1
R256	RD2 2 4251 JM000	Carbon	220kΩ	1/4W	±5%	1
R257	RD1 0 3251 JM000	Carbon	10kΩ	1/4W	±5%	1
R258	RD8 2 2251 JM000	Carbon	8.2kΩ	1/4W	±5%	1
R259	RD8 2 3251 JM000	Carbon	82kΩ	1/4W	±5%	1
R260	RD8 2 2251 JM000	Carbon	8.2kΩ	1/4W	±5%	1
R261	RH5 6 1501 KZ000	Metal	560Ω	1/2W	±10%	1
R262	RD2 2 0251 JM000	Carbon	22Ω	1/4W	±5%	1
R263	RD6 8 0251 JM000	Carbon	68Ω	1/4W	±5%	1
R264	RD1 0 2251 JM000	Carbon	1kΩ	1/4W	±5%	1
R266	RD6 8 3251 JM000	Carbon	68kΩ	1/4W	±5%	1
R301	RD3 3 A251 JM000	Carbon	3.3Ω	1/4W	±5%	1
R302	RD5 6 1251 JM000	Carbon	560Ω	1/4W	±5%	1
R303	RD5 6 A251 JM000	Carbon	5.6Ω	1/4W	±5%	1
R304	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	±5%	1
R305	RD5 6 2251 JM000	Carbon	5.6kΩ	1/4W	±5%	1
R306	RD1 0 1251 JS000	Carbon	100Ω	1/4W	±5%	1
R307	RD5 6 3251 JM000	Carbon	56kΩ	1/4W	±5%	1
R308	RD2 2 3251 JM000	Carbon	22kΩ	1/4W	±5%	1
R309	RD1 0 3251 JM000	Carbon	10kΩ	1/4W	±5%	1
R310	RH5 6 1501 KZ000	Metal	560Ω	1/2W	±10%	1
R311	RD5 6 1251 JM000	Carbon	560Ω	1/4W	±5%	1
R312	RD3 9 1251 JM000	Carbon	390Ω	1/4W	±5%	1
R313	RD4 7 1251 JM000	Carbon	470Ω	1/4W	±5%	1
R314	RD3 9 0251 JS000	Carbon	39Ω	1/4W	±5%	1
R315	RD2 2 0251 JS000	Carbon	22Ω	1/4W	±5%	1
R316	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	±5%	1
R317	RD1 8 3251 JM000	Carbon	18kΩ	1/4W	±5%	1
R318	RD8 2 3251 JM000	Carbon	82kΩ	1/4W	±5%	1
R319	RD6 8 2251 JM000	Carbon	6.8kΩ	1/4W	±5%	1
R320	RD2 2 3251 JM000	Carbon	22kΩ	1/4W	±5%	1
R321	RD2 2 3251 JM000	Carbon	22kΩ	1/4W	±5%	1
R322	RD1 5 0251 JS000	Carbon	15Ω	1/4W	±5%	1
R323	RD1 5 0251 JS000	Carbon	15Ω	1/4W	±5%	1
R324	RD1 0 3251 JM000	Carbon	10kΩ	1/4W	±5%	1
R325	RH1 0 1501 KZ000	Metal	100Ω	1/2W	±10%	1
R326	RD4 7 3251 JM000	Carbon	47kΩ	1/4W	±5%	1
R327	RD3 3 3251 JM000	Carbon	33kΩ	1/4W	±5%	1
R328	RD4 7 3251 JM000	Carbon	47kΩ	1/4W	±5%	1
R329	RD4 7 1251 JM000	Carbon	470Ω	1/4W	±5%	1
R330	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	±5%	1
R333	RD4 7 3251 JM000	Carbon	47kΩ	1/4W	±5%	1
R334	RD5 6 3251 JM000	Carbon	56kΩ	1/4W	±5%	1
R335	RD2 2 3251 JM000	Carbon	22kΩ	1/4W	±5%	1
R336	RD4 7 3251 JM000	Carbon	47kΩ	1/4W	±5%	1
R337	RD1 0 3251 JM000	Carbon	10kΩ	1/4W	±5%	1
R338	RD3 9 1251 JM000	Carbon	390Ω	1/4W	±5%	1
R339	RD1 2 4251 JM000	Carbon	120kΩ	1/4W	±5%	1
R340	RD1 5 3251 JM000	Carbon	15kΩ	1/4W	±5%	1
R341	RD4 7 3251 JM000	Carbon	47kΩ	1/4W	±5%	1
R342	RD4 7 3251 JM000	Carbon	47kΩ	1/4W	±5%	1
R343	RD1 8 2251 JM000	Carbon	1.8kΩ	1/4W	±5%	1
R344	RD5 6 A251 JS000	Carbon	5.6Ω	1/4W	±5%	1

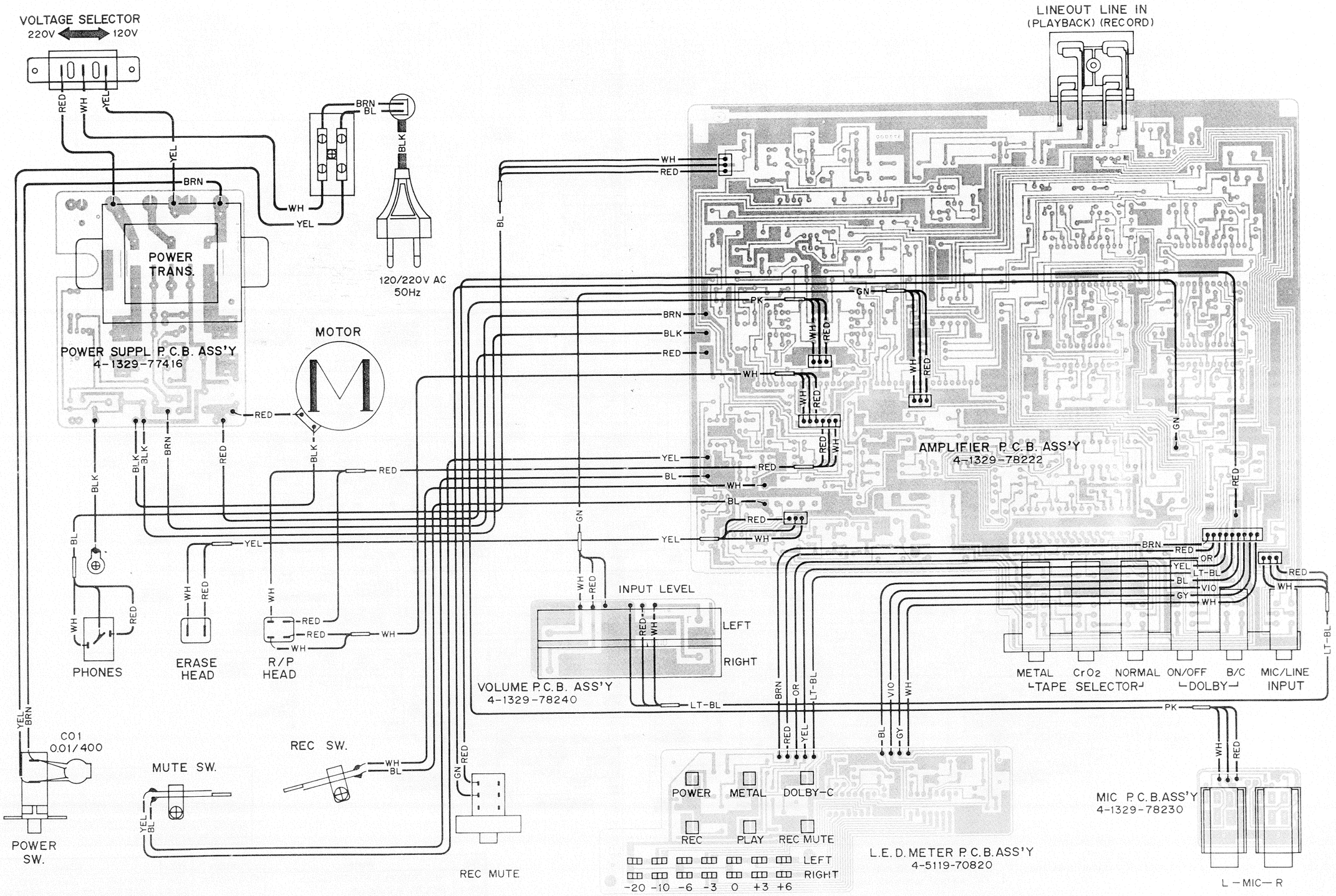
POWER SUPPLY P.C.B. ASSY

		4 1329 77416	Power Supply P.C.B. Assy				1
	⚠	4 2519 73490	Power Trans				1
F01	⚠	4 2249 70040	Fuse T500mA				1
F02	⚠	4 2249 70040	Fuse T500mA				1
		4 2369 70740	Pin RT				3
		4 2359 70990	Socket Pin RT				3
C501		CC2 2 3500 KE00C	Ceramic	0.022μF	50V	±10%	1
C502		CC2 2 3500 KE00C	Ceramic	0.022μF	50V	±10%	1
C503		CD1 0 8350 0001V	Electrolytic	1000μF	35V		1
C504		CD4 7 7250 0001V	Electrolytic	470μF	25V		1
C505		CC1 0 3500 KE00C	Ceramic	0.01μF	50V	±10%	1
C506		CD4 7 7250 0001V	Electrolytic	470μF	25V		1
C507		CD2 2 8160 0001V	Electrolytic	2200μF	16V		1
D501		202 5 3210 20020	Diode, GZA20U				1
D503		4 2029 70620	Diode Bridge W02				1
D504		202 5 2450 13540	Diode, DS135 D				1
Q501		4 2039 70601	TR 2SC1846R				1
R501		RD3 3 A251 JM000	Carbon	3.3Ω	1/4W	±5%	1
R502		RD6 8 1251 JM000	Carbon	680Ω	1/4W	±5%	1
R503		RD5 6 A251 JM000	Carbon	5.6Ω	1/4W	±5%	1
R504		RD1 5 2251 JM000	Carbon	1.5kΩ	1/4W	±5%	1

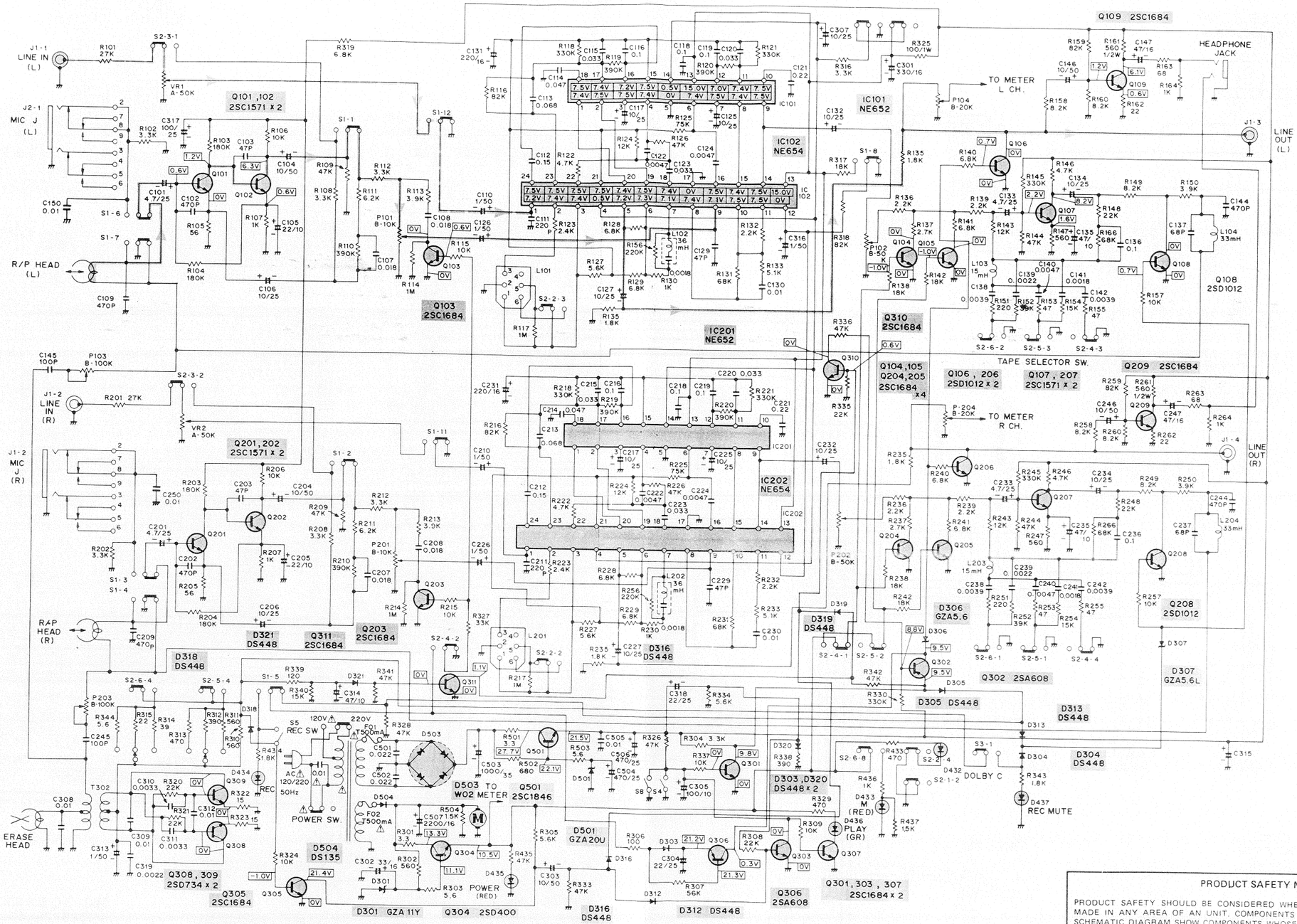
PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
	MIC P.C.B. ASSY					
	4 1329 78230	Mic P.C.B. Assy				1
0001	4 2359 75382	1P Jack				1
0002	4 2359 75382	1P Jack				1
0003	4 2359 75843	Connector 3P Assy				1
	VOLUME P.C.B. ASSY					
	4 1329 78240	Volume P.C.B. Assy				1
	4 2229 73930	Slide Volume 50K-A				1
	4 2359 75841	Connector 3P Assy				1
	4 2359 75842	Connector 3P Assy				1
	L.E.D. METER P.C.B. ASSY					
	4 5119 70820	L.E.D. Meter P.C.B. Assy				1
	131 2 6113 49100	Shelter				1
	4 2359 75156	Connector 9P Assy				1
C411	CD1 0 6160 0001V	Electrolytic	10μF	16V		1
C412	CD2 2 5160 0000V	Electrolytic	2.2μF	16V		1
C421	CD1 0 6160 0001V	Electrolytic	10μF	16V		1
C422	CD2 2 5160 0000V	Electrolytic	2.2μF	16V		1
C431	CD1 0 6160 0001V	Electrolytic	10μF	16V		1
D411	D00 - SLP- 158B-	L.E.D., SLP-158B				1
D412	D00 - SLP- 158B-	L.E.D., SLP-158B				1
D413	D00 - SLP- 158B-	L.E.D., SLP-158B				1
D414	D00 - SLP- 258B-	L.E.D., SLP-258B				1
D415	D00 - SLP- 258B-	L.E.D., SLP-258B				1
D416	D00 - SLP- 258B-	L.E.D., SLP-258B				1
D417	D00 - SLP- 258B-	L.E.D., SLP-258B				1
D421	D00 - SLP- 158B-	L.E.D., SLP-158B				1
D422	D00 - SLP- 158B-	L.E.D., SLP-158B				1
D423	D00 - SLP- 158B-	L.E.D., SLP-158B				1
D424	D00 - SLP- 258B-	L.E.D., SLP-258B				1
D425	D00 - SLP- 258B-	L.E.D., SLP-258B				1
D426	D00 - SLP- 258B-	L.E.D., SLP-258B				1
D427	D00 - SLP- 258B-	L.E.D., SLP-258B				1
D432	4 2029 72100	L.E.D., GL-9NG54				1
D433	4 2029 72101	L.E.D., GL-9PR54				1
D434	4 2029 72101	L.E.D., GL-9PR54				1
D435	4 2029 72101	L.E.D., GL-9PR54				1
D436	4 2029 72100	L.E.D., GL-9NG54				1
D437	4 2029 72101	L.E.D., GL-9PR54				1
IC411	4 2069 71380	IC IR2E02				1
IC421	4 2069 71380	IC IR2E02				1
R411	RD1 2 3251 JS000	Carbon	12kΩ	1/4W	±5%	1
R412	RD1 0 4251 JS000	Carbon	100kΩ	1/4W	±5%	1
R413	RD2 2 3251 JS000	Carbon	22kΩ	1/4W	±5%	1
R414	RD5 6 2251 JS000	Carbon	5.6kΩ	1/4W	±5%	1
R415	RD6 8 2251 JS000	Carbon	6.8kΩ	1/4W	±5%	1
R421	RD1 2 3251 JS000	Carbon	12kΩ	1/4W	±5%	1
R422	RD1 0 4251 JS000	Carbon	100kΩ	1/4W	±5%	1
R423	RD2 2 3251 JS000	Carbon	22kΩ	1/4W	±5%	1
R424	RD5 6 2251 JS000	Carbon	5.6kΩ	1/4W	±5%	1
R425	RD6 8 2251 JS000	Carbon	6.8kΩ	1/4W	±5%	1
R433	RD4 7 1251 JS000	Carbon	470Ω	1/4W	±5%	1
R434	RD1 8 2251 JS000	Carbon	1.8kΩ	1/4W	±5%	1
R435	RD1 0 2251 JS000	Carbon	1kΩ	1/4W	±5%	1
R436	RD1 8 2251 JS000	Carbon	1.8kΩ	1/4W	±5%	1
R437	RD1 5 2251 JS000	Carbon	1.5kΩ	1/4W	±5%	1

POINT TO POINT WIRING DIAGRAM



SCHEMATIC DIAGRAM



NOTES:

1. All resistors values are indicated in "ohm" (K=10^3, M=10^6).
2. All capacitors values are indicated in "μF" (P=10^{-12}).
3. All voltages indicated on the schematics are measured under the following conditions.
   a. Use a V.T.V.M.
   b. All voltages ±10% with respect to chassis ground
   c. No signals at input terminals
   d. AC input at 220 volts 50 Hz
4. This is a basic schematic diagram.

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PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT REPLACEMENT IS MADE IN ANY AREA OF AN UNIT. COMPONENTS INDICATED BY A MARK ⚠ IN THIS SCHEMATIC DIAGRAM SHOW COMPONENTS WHOSE VALUE HAS SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. IT IS PARTICULARLY RECOMMENDED THAT ONLY PARTS SPECIFIED ON THE ATTACHED PARTS LIST BE USED FOR COMPONENT REPLACEMENT POINTED OUT BY THE MARK.

No.	Name	Position	No.	Name	Position
S1	RECORD/PLAYBACK Switch	PLAYBACK	S2-5	TAPE SELECT Switch (CrO_2)	OFF
S2-1	DOLBY B/C Switch	C	S2-6	TAPE SELECT Switch (METAL)	OFF
S2-2	DOLBY NR Switch	ON	S3	RECORD MUTE Switch	OFF
S2-3	INPUT SELECT Switch	LINE	S4	MUTE Switch	OFF
S2-4	TAPE SELECT Switch (NORMAL)	ON	S5	RECORD Switch	OFF

SCHEMATIC DIAGRAM (Continued)